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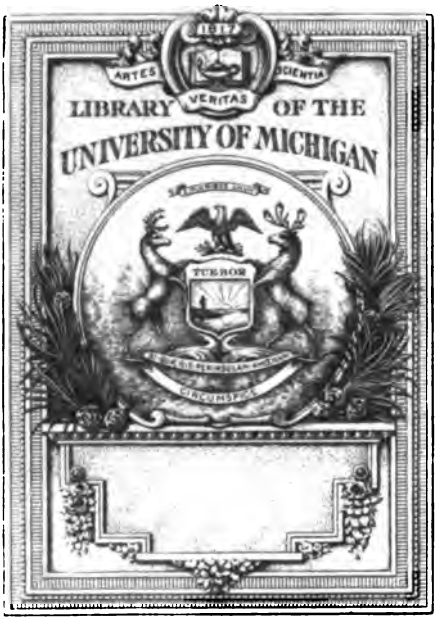
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State Agricultural Society

TOGETHER WITH ADDRESSES AND PAPERS PRESENTED AT THE ANNUAL FARMERS' STATE CONVENTION HELD IN THE ROOMS OF THE SOCIETY IN THE CAPITOL AT MADISON, FEBRUARY, 1891.

VOL. XXIX.

COMPILED BY

JOHN M. TRUE, Secretary.

MADISON, WISCONSIN:
DEMOCRAT PRINTING COMPANY, STATE PRINTERS
1891.

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1891.

LETTER OF TRANSMITTAL.

To His Excellency, GEO. W. PECK,

Governor of the State of Wisconsin:

I take pleasure in transmitting to you, the twenty-ninth annual report of the Wisconsin State Agricultural Society. It affords me much satisfaction to be able by the provisions of our legislative enactments, to present to the public, a volume so fully demonstrating the thrift and intelligence of the farmers of our state.

JOHN M. TRUE,
Secretary.

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		Knowles, Geo. P...	Fond du Lac.
		Koch, H. C.....	Milwaukee.
Ilsley, Chas. F.....	Milwaukee.	Koch, John C	Milwaukee.
Inbusch, J. H	Milwaukee.	Kopmeier, John...	Milwaukee, 120 Canal St.
Ingham, A. C			
Iverson, J. C.....	Milwaukee.	Koss, Rudolph.....	Milwaukee.
		Kraus, Fred.....	Milwaukee.
		Krull, Robt.....	Milwaukee.
Jackman, Hiram ..			
Jacobs, Wm.....	Madison.		
Jacobs, Jr., Wm ..	Madison.	Ladd, M. L.....	Mendota, Ill.
Jeffrey, Geo.....	Milwaukee.	Lafeber, James....	Wauwatosa.
Jenkins, J. G.....	Milwaukee.	Lamb, F. J.....	Madison.
Jenks, S. R.....		Landauer, Max....	Milwaukee.
Jenkins, J. C.....	Janesville.	Lando, Julius.....	Milwaukee.
Jerdee, L. P.....		Lapham, Henry...	Summit.
Jerdee, M. P.....		Larkin, B. F.. ...	Madison.
Johnson, John A .	Madison.	Larkin, C. D.....	Milwaukee.
Johnson, Jr., John	Madison.	Larkin, C. H.....	Milwaukee.
Johnson, Jos	Hartland.	Larkin, Daniel.....	Madison.
Johnson, M. B.....		Lawrence, W. A...	Janesville.
Johnston, R. A. ..	Milwaukee.	Lawrie, James.....	Milwaukee.
Johnston, W. A...	Minneapolis.	Lawton, J. G.....	De Pere.
Johnston, John....	Milwaukee.	Lazier, Ed.....	Rochelle, Ill.
Jones, C. H.....	Sun Prairie.	Learned, J. M.....	
Jones, E. D.....	Fond du Lac.	Leidersdorf, B.....	Milwaukee.
Jones, John N.....	Madison.	Leitch, Jr., W. T..	
Josslyn, E. S.....	Milwaukee.	Leitch, W. T.....	
		Lennox, B. G.....	Chicago, Ill.
		Leslie, John.....	
Kane, A. L.... ...	Milwaukee.	Lester, Waterman.	
Keenan, Mathew..	Milwaukee.	Lewis, Calvin E...	Milwaukee.
Kellogg, Geo. J...	Janesville.	Lewis, John L. ...	Madison.
Kelly, Thos. L.....	Milwaukee.	Lindsay, E. J.....	Milwaukee.
Keogh, Edward ...	Milwaukee.	Little, Thos. H....	Janesville.

Name.	Residence.	Name.	Residence.
Lloyd, Lewis.....	Cambria.	McPherson, J. P...	Springdale.
Lockin, John H...	Pueblo, Colo.	Meehan, James....	Milwaukee.
Lockwood, John...		Meehan, P.....	Milwaukee.
Lucy, O. K.....	Columbus.	Mehl, John.....	Milwaukee.
Ludlow, A.....	Monroe.	Meinecke, Jr., A...	Milwaukee.
Luening, A. F.....	Milwaukee.	Meinecke, Jno.....	Milwaukee.
Lunzmann, C.....	Milwaukee.	Melindy, Miss M.	
Lyman, L. H.....	Madison.	A. M.....	Milwaukee.
Lynch, T. M.....	Janesville.	Mendel, H. M.....	Milwaukee.
Lysaght, Wm.....	Monroe.	Merrill, Alf..	Madison.
		Meyer, W. H.....	Milwaukee.
Macomber, S. D...	New Lisbon.	Millard, A. F.....	Milwaukee.
Mahoney, George..	Milwaukee.	Miller, B. K... ...	Milwaukee.
Main, A. H.....	Madison.	Miller, John.....	Milwaukee.
Manegold, A. F....	Milwaukee.	Miller, Chas. B....	Madison.
Manegold, Jr., Chas	Milwaukee.	Miller, Roswell....	Chicago.
Mann, Andrew L..	Madison.	Miller, Fred.....	Milwaukee.
Mann, Curtis.....	Oconomowoc.	Miller, Jr., B. K...	Milwaukee.
Mann, Fred M.....	Milwaukee.	Millett, Chas. O....	Beloit.
Mann, Henry.....	Milwaukee.	Mills, Simeon.....	Madison.
Mann, J. E.....	Madison.	Miner, Cyrus.....	Janesville.
Mann, J. G.....	Milwaukee.	Miner, G. B.....	Milwaukee.
Mannwaring, Wm.	Black Earth.	Mitchell, G. Stanley	Milwaukee.
Marshall, Samuel..	Milwaukee.	Mitchell, John L....	Milwaukee.
Martin, A. C.. ...	Ashton.	Mock, B.....	Milwaukee.
Martin, C. L.....	Janesville.	Mohr, Oscar.....	Milwaukee.
Martin, Nathaniel.		Mooney, R. D.....	Brown Deer.
Martin, S. W.... .		Moore, B. F.....	Fond du Lac.
Mason, G. A.....		Morden, Edward...	Milwaukee.
Matthews, A. R....	Milwaukee.	Morehouse, L. H...	Madison.
Matthews, E. P....	Milwaukee.	Morgan, James....	Milwaukee.
Maxon, Glenway..	Milwaukee.	Morgan, Thomas..	Milwaukee.
Maxon, O. T.....	S.Evanston, Ill.	Morrison, W. H...	Madison.
May, A. C.....	Los Angeles, Cal.	Moxley, A. R.....	
		Mueller, Louis J...	Milwaukee.
Mayhew, F. L....	Milwaukee.	Mueller, Oscar.....	Milwaukee.
Mayhew, T. W....	Milwaukee.	Mullen, James.....	Milwaukee.
McCarty, F. D....	Glenn Harbor, Mich.	Murray, Geo.....	
McConnell, L. J...	Madison.		
McConnell, Wm. N.	Dartford.	Nash, C. D.....	Milwaukee.
McCord, Sam'l. ..	Milwaukee.	Nason, S. L.....	Nasonville.
McCormack, J. G..	Madison.	Neacy, M.....	Milwaukee.
McDermott, Wm..	Fond du Lac.	Needham, J. P.....	Wauwatosa.
McDonald, A.....	Alloa.	Nelson, Cassius B..	Madison.
McDonald, John W	Fond du Lac.	Newcomb, S. B....	Cold Spring.
McDowell, H. C...	Oconomowoc.	Newcome, C. W...	Milwaukee.
McFetridge, E. C..	Beaver Dam.	Newton, I. S.....	Middleton.
McGeoch, P.....	Milwaukee.	Newton, T. L.....	Beaver Dam
McKenna, Martin..	Madison.	Neuser, Henry.....	Milwaukee.
McKerrow, Geo...	Sussex.	Nichols, L. T.....	Berlin.
McKinney, H. D...	Janesville.	Nieman, L. W.....	Milwaukee.
McLarin, W. P....	Milwaukee.	Norris, C. W.....	Milwaukee.
McLaughlin, J. H.	Milwaukee.	Norton, J. B.....	Madison.
McNeil, David.....	Stoughton.	Nowell, W. A.. ...	Milwaukee.

Name.	Residence.
Noyes, A. F.....	Beaver Dam.
Nunnemacher, Rob.	Milwaukee.
Nunnemacher, R..	Milwaukee.
Ober, R. P.....	
Oberman, Geo. J..	Milwaukee.
Ogilvie, Robt. B...	Madison.
Olcott, J. B.....	Oshkosh.
Olcott, John D....	Milwaukee.
Oliver, Joseph B...	Milwaukee.
Olney, C. W.....	La Cygne, Kan.
Ormond, Wm. M..	
Orr, George H.....	
Osborne, W. H....	Milwaukee:
Otjen, O. S.....	Milwaukee.
Ott, George V.....	Lawtey, Fla.
Pabst, Fred.....	Milwaukee.
Pabst, Jr., Fred...	Milwaukee.
Pabst, Gustav.....	Milwaukee.
Palmer, E. W.....	Fitchburg.
Palmer, Henry....	Verona.
Palmer, H. L.. ...	Milwaukee.
Palmer, J. S	Baraboo.
Palmer. O. M.....	Oregon.
Park, W. J...	Madison.
Parker, C. H.. ...	Beloit.
Parkinson, A. C...	Columbus.
Parmley, Ira.....	Center.
Parsons, P. B.....	
Partridge, Jno. S..	Whitewater.
Patten, L. F.....	Janesville.
Patton. Jas. E....	Milwaukee.
Paul, Edward J...	Milwaukee.
Paul, John H.....	Genesee.
Paulson. Aug. A...	New Holstein.
Payne, H. C.....	Milwaukee.
Payne. Wm.....	Janesville.
Peck, Geo. W.....	Madison.
Peffer, G. P.....	Pewaukee.
Peffer, Miss Kate F.	Pewaukee.
Pember, R. T.....	Janesville.
Pereles, Jas. M	Milwaukee.
Pereles, Thos. J....	Milwaukee.
Perkins, P. M	Burlington.
Perrine, L. W.....	
Perry, B. F...	Madison.
Pettit, C. H.....	Milwaukee.
Pettit, L. J.....	Milwaukee.
Philips, A. J.....	West Salem.
Phillips, J. P.....	
Pier, C. K.....	Milwaukee.
Pierce, C. L... ...	Milwaukee.
Pilgrim, D. T.....	Wauwatosa.
Pilgrim, Jr., D. T..	Wauwatosa.
Pinney, S. U.....	Madison.
Plumb, J. C.	Milton.
Plumb, T. D.....	Madison.
Plummer, B. G....	Wausau.
Polzinsky, Jos.....	
Pond, Samuel A...	Janesville.
Poppert, Geo	Milwaukee.
Porter, G. E.....	Eau Claire.
Porter, Wm. H....	Marshall.
Powers, D. J.... ..	
Powers, W. J... ..	Black Earth.
Pratt, E. E..... ..	
Pratt, Oris.... ...	Spring Prairie.
Pres. St. Peters Valley Farm Club...	
Preusser, C..... .	Milwaukee.
Prichard, Miss M.E.	Janesville.
Quinn, Jeremiah...	Milwaukee.
Rademacher, Wm..	Milwaukee.
Rawson, C. A. ...	
Ray, Charles	Milwaukee.
Raymond, S. O....	Geneva.
Reed, Harrison....	Madison.
Resague, A. C.....	Janesville.
Rexford, J. D	Janesville.
Reynolds, John....	Ranney.
Reynolds, Thomas.	Madison.
Rice, E. M.....	Whitewater.
Rich, A. W.....	Milwaukee.
Richards, Griffith..	Cambria.
Richardson, D.....	Middleton.
Richardson, H.....	Janesville.
Richardson, James.	
Richardson, R. J ..	Janesville.
Richmond. A.....	Whitewater.
Richter, Frederick.	Milwaukee.
Riebsam, C. R.....	Madison.
Riordan, Chas.....	
Robbins, J.....	
Robbins, J. V.....	
Robinson, Geo. I...	Milwaukee.
Roe, J. P.....	
Rogers, C. C.....	Milwaukee.
Rogers, C. H.....	Milwaukee.
Rogers, D. G.....	Milwaukee.
Rogers, H. G.....	Milwaukee.
Rogers, J. S.....	Burlington.
Rogers, Lawrence.	
Rohlfing, Wm.....	Milwaukee.

Name.	Residence.	Name.	Residence.
Rosenkranz, O. L..	Milwaukee.	Sloan, I. C.....	Madison.
Rowe, Richard W..	Madison.	Smith, A. A. L....	Milwaukee.
Rowe, W. E.....	Mazomanie.	Smith, A. E.....	Milwaukee.
Rucker, A. M.....	Milwaukee.	Smith, Angus.. ...	Milwaukee,
Ruggles, J. D.....		Smith, E. C	Markesan.
Rusk, Jeremiah M.	Washington, D. C.	Smith, J. M.....	Green Bay.
		Smith, J. Morris...	
Rust, Julius.....	N. Greenfield.	Smith, M. C.....	Janesville.
Ryder, James K...	Waterloo.	Smith, S. B.....	Vernon.
		Smith, Winfield...	Milwaukee.
		Snell, H.....	Madison.
		Snyder, E. A.....	West Granville
Salisbury, Abraham	Milwaukee.	Snyder, Fred.....	Milwaukee.
Salisbury, D. F....	Oregon.	Solper, Chas.....	Milwaukee.
Salisbury, R. W....	Paoli.	Somers, Peter J....	Milwaukee.
Sanborn, Jas. S....	Milwaukee.	Spaulding, D. J....	Black Riv. F'lls.
Sanderson, H. B...	Milwaukee.	Spencer, J. C.....	Milwaukee.
Sanderson, R. B...		Spencer, John C...	Milwaukee.
Sanderson, Wm....	Milwaukee.	Spencer, R. C.....	Milwaukee.
Sanger, Casper M..	Waukesha.	Sprecher, John....	Madison.
Sarles, John H	Boscobel.	Squire, Thomas B..	Waterloo.
Savland, John.....	Milwaukee.	St. John, J. W	Janesville.
Sawyer H. W	Hartford.	Stadler, J. C.....	Milwaukee.
Sawyer, James....	Milwaukee.	Stafford, H. H....	Milwaukee.
Schley, Bradley G.	Milwaukee.	Stanley, Wm.....	Vienna.
Schœffel, Geo. J...	New York.	Stannard, A. C....	Milton.
Schuter, Chas.....		Stapleton, J. A....	Milwaukee.
Schweitzer, Theo..	Milwaukee.	Stark, Chas. G.....	Milwaukee.
Seamans, S. H.....	Milwaukee.	Stark, Edward J...	Milwaukee.
Seaver, J. E.....	Darien.	Starke, Conrad	Milwaukee.
Seiben, John.....	Milwaukee.	Steele, Chester.....	Milwaukee.
Seville, Jas.....	Lodi.	Steensland, H.....	Madison.
Sexton, Wm. F....	Milwaukee.	Stelloh, Henry.....	Root Creek.
Sharp, J. W.....		Stephenson, F. M..	Menomonee, Mich.
Shaw, Charles H..	Milwaukee.		
Shaw, Geo. B.....	Eau Claire.	Stephenson, Isaac..	Marinette.
Shaw, J. B.....		Stevens, J. T.....	Madison.
Shea, Edward.....	Milwaukee.	Stewart, C. R.....	Carson, Minn.
Shea, Thomas	Milwaukee.	Stewart, G. H.....	Colorado Springs, Colo.
Sheldon, A. H.....	Janesville.		
Sheldon, D. G.....	Madison.	Stickney, Chas	Wauwatosa.
Sheldon, S. L.....	Madison.	Stickney, J. S.....	Wauwatosa.
Sheperd, Clarence .	Milwaukee.	Stilson, Adelbert...	Oshkosh.
Sherman, Adelmar	Janesville.	Stilson, Edgar.....	Oshkosh.
Sherman, Amaziah	Janesville.	Stockman, Jno....	Milton.
Sherman, H. B...	Burnett Junct.	Stoltz, H. L.....	646 Island Ave., Milwaukee.
Shipman, S. V....	Chicago, Ill.		
Sholes, Chas.....	Milwaukee.	Stone, G..	Beloit.
Simmons, C. J.....	Monroe.	Storm, Wm.....	Madison.
Simonds, Wm. L..	Milwaukee.	Stowe, La Fayette.	Sun Prairie.
Simpson. E. B.....	Milwaukee.	Street, Richard....	Waukesha.
Skelly, Chas.....	Janesville.	Sutherland, C.....	Madison.
Skinner, E. W	Sioux City, Ia.	Sutton, J. J.....	Columbus.
Skinner, Geo. J....	Sioux Falls, So. Dakota.	Swain, W. W.....	Madison.
		Swan, E. A	Wauwatosa.

Name.	Residence.	Name.	Residence.
		Van Schaik, I. W.	Milwaukee.
Swan, N. J.....	Wauwatosa.	Van Slyke, N. B...	Madison.
Swan, O. J..	Wauwatosa.	Vaughn, A. W	Lodi.
		Viall, Andrus	Madison.
		Vilas, Chas. H.....	Chicago, Ill.
		Vilas, Wm. F	Madison.
Tallman, W. H....	Janesville.	Vilter, Ernst	Milwaukee.
Taylor, E. T.....	Mukwonago.	Vogel, Fred.....	Milwaukee.
Taylor, H. A	Washington, D. C.		
Taylor, Wm. R....	Cottage Grove.		
Tenney, D. K	Chicago, Ill.	Wackerhagen, E ..	Racine.
Tenney, H. A	Madison.	Waggstaff. S. M...	
Tenney, Samuel A.	Hartland.	Wagner, Julius...	Milwaukee.
Terwilliger, Jas ...	Madison.	Wait, J. B	
Terwilliger, Sid....	Madison.	Wall, E. C	Milwaukee.
Theurer, Fred	Milwaukee.	Walker, W. A.....	Milwaukee.
Thom, H. C	Beloit.	Walsh, Michael....	Milwaukee.
Thomas, Amos....	Good Hope.	Warren, Fred C...	Fox Lake.
Thomas, W. H....	Pewaukee.	Warren, J. H ...	Janesville.
Thorp, J. G	Eau Claire.	Webster S. R.....	Danville.
Thorson, John.....	Milwaukee.	Weigler, August..	Milwaukee.
Tibbits, Geo. M....	Milwaukee.	Weisel, Peter	Milwaukee.
Tierney, Byron ...		Weiner, Jacob.....	Milwaukee.
Todd, J. G	Janesville.	Welch, William...	Madison.
Tolford, J. W	Neillsville.	Wellauer, Jacob...	Milwaukee.
Torgerson, Lars ...		Werner. John.....	
Torry, R. D		West, Henry.....	Madison.
Townley, Jno	Moundville.	West, Henry H....	Milwaukee.
Tratt, F. W	Whitewater.	West. S. C	Milwaukee.
Treat Geo. E	Milwaukee.	Weston, John.....	Burnett.
Treat, R. B.....		Whalen, J. M	
True, John M	Baraboo.	Wharton, J. S.....	Milwaukee.
Tucker, Joseph J..	Chicago.	Wheeler, George F	Milwaukee.
Tuttle, A. G... ...	Baraboo.	Wheeler, Guy.....	Janesville.
Tweedy, Jr.. J. H .	Milwaukee.	Wheeler, J. M	Waukesha.
Twining, M. S.....	Monroe.	Wheeler, L. A....	Milwaukee.
		Wheelock, W. G ..	Janesville.
		Wheelwright, Jesse	Middleton.
		Whitcombe, H. F .	Milwaukee.
Uihlein, Alfred....	Milwaukee.	Whitney, W. F....	Milwaukee.
Uihlein, August...	Milwaukee.	Wicks, Thomas....	
Uihlein, Henry....	Milwaukee.	Wightman, H.....	
Usher, Ellis	Milwaukee.	Wilcox, C. F.....	Janesville.
		Wilkin, T. S.....	Milwaukee.
		Wilkins, A. W	Milwaukee.
		Willey, O. S	Benton Har., Mich.
Van Brunt, W. A..	Horicon.		
Vance, David	Milwaukee.	Williams, C. H....	Baraboo.
Vance, Frank L...	Milwaukee.	Williams, D.....	Darien.
Van Cott, Albert B	Madison.	Williams, Daniel.	Summit.
Van Etta, Jacob...	Madison.	Williams, J. P	Madison.
Van Kirk, N	Chicago, Ill.	Williams, Randall.	Janesville.
Van Norman, G. B.	Milwaukee.	Williams. S. B	Madison.
Van Orden, J	Baraboo.	Wilson, Zebina....	Palmyra.

Name.	Residence.	Name.	Residence.
Wilson, William ..	Wausau.	Wylie, Geo.....	Leeds.
Wilson, William ..		Wylie, Geo.....	Elkhorn.
Wolcot, H.....	Milwaukee.		
Wolf, W. H.....	Milwaukee.		
Wood, J. W.....	Baraboo.		
Wootton, Robert..	Madison.	Yewdale, Merton H	Milwaukee.
Worthington, B. M.			
Wright, D. H.....	Madison.		
Wright, Geo.....	Mt. Horeb.		
Wright, J. S	Emerald Grove	Zimmerman, G. J..	Milwaukee.
Wright, Josiah T..	Janesville.	Zimmerman, V....	Milwaukee.
Wright, O. W....		Zinn, A. C	Milwaukee.
Wurster, Jacob....	Milwaukee.	Zwietusch, Otto...	Milwaukee.

MORTUARY.

Abbott, Chauncey,
Adams, Isaac,
Allen, H. M.,
Allen, W. C.,
Allis, E. P.,
Arnold, J. M.,
Atwood, Chas. D.,
Atwood, David,
Ayers, J. W.,
Bacon, I. P.,
Bailey, M. T.,
Baker, R. H.,
Barnes, Geo.,
Barron, H. D.,
Barry, James,
Baxter, Geo.,
Bayley, F. W.,
Beecroft, W. G.,
Bemis, Fred,
Benedict, S. G.,
Bennett, A. A.,
Billings, H. M.,
Blair, Francis J.,
Blanchar, W.,
Blossom, Levi,
Bostwick, Perry,
Bowen, J. B.,
Braley, A. B.,
Briard, W. A.,
Briggs, F.,
Brodhead, E. H.,
Brown, B. F.,
Brown, T.,
Burnham, Geo.,
Burnham, John L.,
Bush, Samuel,
Busjaeger, A.,
Button, Henry H.,
Campbell, C. M.,
Carpenter, J. A.,
Carter, Guy,
Cary, I.,
Casar, Wm.,
Chandler, Sam,
Chase, Enoch,
Chase, H.,
Child, John,
Clark, C. R.,
Clark, Satterlee,
Coit, D. R.,
Coleman, W. W.,
Corey, J.,
Cottrill, J. P. C.,
Craig, A. J.,
Crocker, Hans,
Cross, J. P.,
Curtis, L. S.,
Curtis, Seymour,
Daggett, M. L.,
Daggett, S. S.,
Dahlman, John,
Davis, G. L.,
Davis, Jno.,
Davis, S. F.,
Dean, John S.,
Dean, N. W.,
Dewey, Nelson,
Dickson, J. P.,
Dodge, J. E.,
Doris, John,
Dorn, M. M.,
Doty, E. P.,
Dousman, H. L.,
Dousman, J. B.,
Drury, E. W.,
Dunn, Andrew,
Dunn, Wm.,
Dunning, Abel,
Durkee, Chas.,
Durkee, H.,
Elson, Chas.,
Ellsworth, O.,
Emmons, N. J.,
Fairbanks, E.,
Fernley, John,
Fifield, L.,
Fitch, W. G.,
Foote, Sidney,
Fowle, Jacob,
Fox, W. H.,
Friend, Elias,
Froedert, Fred,
Furlong,, John,
Furlong, Thos. T.,
Gernon, Geo.,
Gillett, R. E.,
Goodrich, G.,
Grant, Albert,
Grant, S. B.,
Green, Anthony,
Green, Geo. G.,
Greenman, H. D.,
Green, Samuel,
Grover, E.,
Guernsey, Orrin,
Hall, S. H.,
Hanchett, A. M.,
Hancock, B.,
Hanford, A. G.,
Hanstram, Peter,
Harrington, N. M.,
Harvey, L. P.,
Helfenstein, J. A.
Hibbard, W. B.,
Hill, P. B.,
Hiner, W. H.,
Hobart, L. J.,
Hodge, Robert,
Hoeflinger, Carl,
Holbrook, Jas.,
Holt, David,
Hopkins, B. F.,
Hopkins, J. C.,
Hughes, Wheldon,
Hunt, J. W.,
Huntington, C. P.,
Hurlbut, E.,
Hutson, Sol,
Jacobs, H. C.,
Janssen, E. H.,
Johnston, Hugh L.,
Johnson, J. C.,
Juneau, Paul,
Kellogg, L. H.,
Kellogg, L. T.,
Kendrick, C. P.,
Kent, A. C.,
Kellogg, Rufus B.,
Kershaw, W. J.,
Kimbal, John,
Kingsley, S. P.,
Klauber, Samuel,
Kneeland, Moses,
Lapham, I. A.,
Larkin, W.,
Lewis, H. A.,
Luddington, H.,
Luddington, Jas. L.,
Lynde, W. P.,
Mabie, E. T.,
Macy, J. B.,
Masters, E. D.,
Matteson, Clinton,
Matts, J. H. B.,
McBride, Alex.,
McCullough, Andrew
McDill, A. L.,
McDougal, G. W.,
McGregor, Alex.,
McIndoe, Walter D.,
McKenna, David,
Mears, W. A.,
Merrill, S. S.,
Miltimore, Ira,
Mitchell, Alex.,

Mix, E. T.,
Morse, D. S.,
Morse, Sam'l,
Moseley, G. F.,
Mosher, J. C.,
Nazro, John,
Newton, Ephraim,
Nott, B. F.,
Paddock, Geo.,
Paine, Geo.,
Page, H. L.,
Page, H. M.,
Park, John W.,
Perkins, P. M.,
Perry, Eli.,
Pfister, Chas.,
Pfister, Guido,
Phelps, Warren A.,
Pinckney, B.,
Plankinton, John.,
Porter, W. F.,
Post, D. T.,
Power, D. G.,
Pritchard, P. M.,
Proudfit, Andrew,
Reed, Herbert,
Reynolds, John,
Reynolds, Mich.,
Reyzer, J. O.,
Richards, Richard,
Roddis, T. R.,
Rodermund, John,
Rogers, Anson,
Ross, W.,
Rowley, N. C.,
Ruble, Simeon,
Russell, Harvey,
Sage, E. C.,
Sanderson, Ed.,
Schandien, Emil,
Schutt, U.,
Scollan, Frank,
Scott, S. B.,
Seiben, John,
Sexton, Kellogg,
Sexton, L.,
Sherman, Geo.,
Sherman, J. M.,
Sherwood, J. C.,
Shipman, A. C.,
Sinclair, Jeff.,
Slaughter, A. B.,
Slaughter, G. H.,
Slocum, G. A.,
Smith, Adam,
Smith, Geo. B.,
Smith, H. L.,
Smith, J. B.,
Smith, S. W.,
Smith, W. E.,
Spaulding, Jos.,
Spaulding, Wm.,
Stevens, G. C.,
Stilson, Eli,
Strong, H. P.
Sullivan, James,
Talmadge, John J.,
Terry, F. H.,
Thomas, M. J.,
Thompson, Dr. W.,
Thompson, J. H.,
Thompson, Ole,
Throop, B.,
True, W. H.,
Utter, Joseph,
Van Nostrand, A. H.,
Vilas, Henry,
Vilas, L. B.,
Vilas, L. M.,
Walrab, Sylval,
Warren, W. R.,
Webb, James A.,
Webster, James,
Webster, Martin,
Weed, Chas.,
Wells, D. L.,
West, A. H.,
Wheeler, W. A.,
White, A.,
White, C. W.,
White, W. A.,
Whittelsey, T. T.,
Willard, J. F.,
Williams, C. L.,
Williams, Daniel.
Williams, G. M.,
Williams, Stephen G.,
Wilson, H. O.,
Wolcott, E. B.,
Woolley, J. T.,
Worthington, D.,
Worthington, Geo.,
Wright, N. A.,
Young, J. E.

LAWS RELATING TO THE SOCIETY.

The Wisconsin State Agricultural Society was organized March 8, 1851, and incorporated by

CHAPTER 5, LAWS OF 1883.

SECTION 1. The Wisconsin State Agricultural Society is hereby declared a body politic and corporate, and by that name it shall be known in all courts and places whatsoever.

SECTION 2. The objects of the society being to promote and improve the condition of agriculture, horticulture and the mechanical, manufacturing and household arts, it shall be allowed for those purposes only, to take, hold and convey real and personal estate; the former not exceeding ten thousand dollars.

SECTION 3. The said corporation shall possess all the powers and privileges conferred, and be subject to all the liabilities imposed upon corporations by the revised statutes of this state, so far as the same may be applicable.

SECTION 4. For the purpose of organizing said society under this charter and for the transaction of such other business as may come before it, the executive committee of the society may call a meeting of the same at such time and place as they may deem proper; first giving due notice thereof.

CHAPTER 40, LAWS OF 1854.

SECTION 2. It shall be the duty of the executive committee of said Wisconsin State Agricultural Society, to keep an accurate account of the manner of expenditure of said sum of money hereby appropriated, and transmit the same, together with the vouchers therefor, to the governor of the state, in the month of January in each year, to be by him laid before the legislature.

SECTION 3. It shall be the duty of said executive committee of the Wisconsin State Agricultural Society to collect, arrange and collate all information in their power, in relation to the nature, origin and preparation of soils; the cultivation and growth of crops; the breeding and management of stock; the application and character of manures and fertilizers; the introduction of new cereals and other grains; and other agricultural subjects, and report the same, together with a statement of their own proceedings, to the governor of this state, in the month of January, in each year, to be by him laid before the legislature.

CHAPTER 53, LAWS 1858.

SECTION 3. The principal officers of the Wisconsin State Agricultural Society shall have full jurisdiction and control of the grounds on which the society may exhibit, and all of the streets and alleys and other grounds adjacent to the same, during all such exhibitions, so far as may be necessary to preserve and keep good order, and so far as may be necessary to exclude therefrom all other exhibitions, booths, stands or other temporary places for the retail or sale of any kind of spirituous or fermented liquors or other article or articles that they might deem objectionable or offensive to said exhibition. The president of the society, or in his absence, any vice president, acting in his stead, shall have the power to appoint any necessary policemen to assist in preserving the peace, quelling any disturbance or arresting offenders, and conveying them to jail for trial; and all such policemen thus appointed shall be vested during the continuance of such exhibition with the ordinary powers and authority of common constables, and be entitled to similar fees for any services rendered or duty performed. Any person or persons who shall wilfully and without leave enter any fair grounds during an exhibition, that are duly enclosed with a proper fence, not less than six feet high, either by climbing over, or under, or through said fence, or by fraudulently receiving and using the tickets or badge of another, or passing the gate-keeper without the proper payment and compliance with the rules of said grounds, shall be deemed guilty of a misdemeanor, and upon conviction thereof before any court, shall be liable to a fine of not less than five nor more than twenty-five dollars; and in case of non-payment, to imprisonment in the county jail not less than one nor more than ten days. Any such offender may be tried before any justice of the peace, or police justice most convenient to be found.

JOINT RESOLUTION NO. 7, SESSION LAWS OF 1866.

Resolved by the assembly, the senate concurring, That the rooms on the north side of the west wing of the capitol, to-wit: The rooms just made vacant by the removal of the attorney general and the superintendent of public instruction, be prepared by the superintendent of public property, for the use of the Wisconsin State Agricultural Society, and that the said society be and hereby is allowed the use of the same until otherwise ordered by the legislature.

CHAPTER 95, LAWS OF 1870.

SECTION 1. Joint stock associations formed under the laws of this state for the encouragement of industry by agricultural and industrial fairs and exhibitions, may purchase and hold such real and personal property as shall be necessary for fair grounds, and such property while used exclusively for such fairs and exhibitions, shall be free from taxes. Provided, that the quantity of the land so exempt shall not exceed forty acres.

CHAPTER 159, LAWS OF 1875.

SECTION 2. The superintendent of public property is hereby authorized to furnish the office of the Wisconsin State Agricultural Society with stationary upon the order of the secretary of said society, the same as other officers in the capitol are supplied.

CHAPTER 65, LAWS OF 1877.

SECTION 1, provides: That nothing in this act shall be construed to prevent any citizen of any other state from becoming a member or officer of any agricultural society or industrial association which is now organized or may hereafter be organized under or by virtue of any law of this state.

CHAPTER 219, LAWS OF 1877.

AN ACT to donate the cereals and other centennial exhibits made by the state, to the State Agricultural Society.

SECTION 1. The cereals and other seeds and glass globes in which said cereals and seeds were exhibited by the state at the centennial exposition; one agricultural map of the state; one case samples fine wool; one picture of the state capitol, and three pictures of centennial buildings, are hereby donated to the above named society, to be by them kept in the agricultural rooms in the capitol.

CHAPTER 199, LAWS OF 1880.

SECTION 1. The Secretary of the State Agricultural Society is hereby authorized to procure for the use of his office the necessary amount of postage stamps or stamped envelopes for the payment of the postage of the official correspondence of his department. The account therefor shall be audited by the secretary of state upon the presentation thereof in the manner hereinbefore provided, and paid out of the state treasury.

CHAPTER 194, LAWS OF 1885.

SECTION 1. There is hereby annually appropriated to the Wisconsin State Agricultural Society the sum of four thousand dollars. *Provided*, that no warrant shall be drawn by the secretary of state for the payment of the sum of money hereby appropriated, except upon the presentation of a sworn statement, signed by the president and secretary of the said Wisconsin State Agricultural Society, certifying that the sale of intoxicating liquors has been prohibited and prevented upon the fair grounds of said Society during the year for which the appropriation is made.

SECTION 2. It shall be the duty of the several agricultural societies entitled to the state aid of one hundred dollars in this state, to send their president or other representative to the state fair, where the annual election of officers is held, their to act on committee of award, and to cast the vote for the county in the aforesaid election.

SECTION 3. On arrival of the president or other representative at the state fair he shall report to the secretary thereof, and on the certificate of the secretary of his attendance and performance of the duties named in section 2 of this act, the treasurer shall pay to him two dollars per day for the time he has been in attendance, not exceeding five days, and six cents per mile, one way, over the nearest traveled route from his home to the place where the state fair is held.

SECTION 4. This act shall take effect and be in force from and after its passage.

CHAPTER 423, LAWS OF 1889.

AN ACT to appropriate to the Wisconsin State Agricultural Society ten per cent. of its paid premiums.

SECTION 1. There is hereby annually appropriated to the Wisconsin State Agricultural Society ten per centum of its paid premiums.

SECTION 2. On the presentation of the sworn statement of the secretary of said society, setting forth the amount due each year under this act, the secretary of state shall issue his warrant for the same which shall be paid by the state treasurer out of any money in the state treasury not otherwise appropriated.

CHAPTER 526, LAWS OF 1889.

AN ACT to provide for and regulate the printing, binding and distribution of the reports of state officers, departments, institutions and societies.

SECTION 5. And further, there shall be printed annually upon the approval and order of the commissioners of public printing, ten thousand copies of the transactions of the Wisconsin State Agricultural Society; the same to embrace the reports of the county and other agricultural societies, and such matters pertaining to the agricultural industries of the state as shall be deemed important; provided the whole number of printed pages shall not exceed four hundred. Seven thousand copies of the transactions of the Wisconsin State Horticultural Society; the same to embrace such abstracts of reports of county and other horticultural societies, and such matters pertaining to the horticultural interests of the state as shall be deemed important, provided that the whole number of printed pages shall not exceed two hundred. Eight thousand copies of the transactions of the State Dairyman's Association, the same to embrace such other matters pertaining to the dairy interests of the state as shall be deemed essential; provided, that the whole number of printed pages shall not exceed two hundred. Twelve thonsand copies of the report of the Agricultural Experiment station of the state university; provided, that the whole number of printed pages shall not exceed two hundred and fifty. Two thousand copies of each of said reports to be bound separately in cloth, all others singly in paper.

Property of A. O. Fox, Oregon, Wis.

SECTION 6. The reports provided for in the preceding section shall be distributed as follows, through the superintendent of public property: Fifteen copies to each member of the legislature, fifty copies to the State Historical Society, ten copies to each county agricultural society and district industrial association, which embraces two or more counties and furnishes the State Agricultural Society a report of its proceedings, to each of the four societies named in the preceding section, fifty copies of the reports of the other three societies, twenty-five copies of each of the reports to the library of the state university, to the governor, lieutenant-governor, secretary of state, state treasurer, attorney-general, state superintendent of public instruction, railroad commissioner and insurance commissioner twenty-five copies each; to the state superintendent of agricultural institutes, fifty copies; to the superintendent of public property, commissioner of labor statistics, adjutant-general, quartermaster-general, state board of health, each ten copies; to each public library in the state two copies; to each state normal school two copies; to each of the state charitable and penal institutions, one copy; and the remaining copies to the respective societies for distribution by their secretaries.

SECTION 7. In no case shall the number of printed pages in any report provided for the act exceed the maximum number specified, except upon written request of the officer submitting the same, and then only upon previous written approval of a majority of the commissioners of public printing, such application and approval to be filed with the secretary of state.

CONSTITUTION.

ARTICLE I.

OF THE NAME AND OBJECT OF THE SOCIETY.

This society shall be known as the "Wisconsin State Agricultural Society." Its object shall be to promote the advancement of agriculture, horticulure, and the mechanical and household arts.

ARTICLE II.

OF THE MEMBERS.

The Society shall consist of life members, who shall pay, on subscribing, twenty dollars, and of honorary and corresponding members, who shall be elected by a two-thirds vote of all the members of the executive board, at any regular meeting. The presidents of county agricultural societies shall be members *ex-officio*, entitled to the same privileges as life members, and together, shall be known as the general committee of the Society.

ARTICLE III.

OF THE OFFICERS.

The officers of the Society shall consist of a president, one vice-president for each congressional district of the state, a secretary, a treasurer, and seven additional members, who shall hold their respective offices for a term of one year from the first day of January next succeeding the date of their election, and until their successors shall have been elected, and all of whom, together with the ex-presidents latest in office, and the president and general secretary of the Wisconsin Academy of Sciences, Arts and Letters, shall constitute the Executive Board.

ARTICLE IV.

OF THE POWERS AND DUTIES OF OFFICERS.

The presidents and vice-presidents shall perform such duties as are common to such officers in like associations, as may be required by the Executive Board.

The secretary shall keep the minutes of all meetings, and have immediate charge of the books, papers, library, and collections, and other property of the Society. He shall also attend to its correspondence, and prepare and superintend the publication of the annual report of the Society, required by law.

The treasurer shall keep the funds of the Society and disburse the same on the order of the president, or a vice-president, countersigned by the secretary, and shall make report of all receipts and expenditures at the regular meeting of the Society in December.

The executive board shall have power to make suitable by-laws to govern the action of the several members thereof. They shall have general charge of all the property and interests of the Society, and make such arrangements for the holding and management of general and special exhibitions as the welfare of the Society and the interests of industry shall seem to require.

The general committee shall be charged with the interests of the Society in the several counties where they respectively reside, and constitute a medium of communication between the executive board and the public at large.

ARTICLE V.

OF MEETINGS AND ELECTIONS.

The annual meeting of the Society for the transaction of general business, shall be held in its rooms at Madison, on the first Wednesday in December, at nine o'clock A. M., in each year, and ten days' notice thereof shall be given by the secretary in one or more papers printed in the city of Madison.

The election of officers of the Society shall be held each year during and at the general exhibition, and the exact time and place of the election shall be notified by the secretary in the official list of premiums, and in all the general programmes of the exhibition.

Special meetings of the Society will be called by order of the executive board, on giving twenty days' notice in at least three newspapers of general circulation in the state, of the time, place and object of such meetings.

At any and all meetings of the Society, ten members shall constitute a quorum for the transaction of business, though a less number may adjourn from time to time.

ARTICLE VI.

OF AMENDMENTS.

This constitution may be amended by a vote of two-thirds of the members attending any annual meeting; all amendments having been first sub-

mitted in writing at the previous annual meeting, recorded in the minutes of the proceedings, and read by the secretary in the next succeeding meeting for the election of officers. All amendments proposed shall be subject to amendment by a majority vote at the meeting when presented, but not thereafter.

BY-LAWS.

SECTION I.

OF OFFICERS.

The officers of the Society shall, *ex-officio*, fill the corresponding offices in the Executive committee.

SECTION II.

OF THE DUTIES AND POWERS OF OFFICERS.

The duties of the President, in addition to those defined by the constitution and the by-laws regulating the duties of the permanent committee, shall be as follows, to-wit:

1. To inspect the fair grounds after they shall have been prepared for the annual exhibition by the special committee of arrangements, appointed for that purpose, and suggest such modifications or further preparations as he may deem necessary.

2. To formally open the annual fair of the society at such time as the Executive committee may prescribe, with an appropriate address.

3. As the executive head of the society, to have a general supervision and control of the entire exhibition, subject only to the authority of the Executive committee.

The duties of the Secretary, more especially defined than in the constitution shall be as follows:

1. To make a faithful record of each meeting of the Executive committee and keep such record in a condition for the convenient reference of any member thereof, at any time, also to make a record of every order drawn on the treasurer, and delivered to parties in whose favor they were so drawn—separately entering and numbering the orders drawn to pay premiums and those to pay general expenses, and so defining them — and of all moneys due the society; in all cases holding the parties so indebted, responsible therefor, until they shall have presented him a certificate from the treasurer showing that the same has been paid.

2. To open and carry on such correspondence as may be advantageous to the Society or to the common cause of agricultural improvement, not only with individual agriculturists and eminent practical and scientific men of other industrial pursuits, but also with other societies or associa-

tions whose objects are kindred to ours, whether in the country or foreign lands, and to preserve a journal of such correspondence in the archives of the Society.

3. To collect and arrange for convenient examinations, standard agricultural works and periodical publications, together with such models, machines and implements as may be donated to, or otherwise acquired by the Society.

4. To investigate as far as practicable, the nature of fertilizers, indigenous and cultivated plants, insects injurious to vegetation, etc., and to collect and preserve such specimens thereof, as will illustrate the natural history and agricultural resources, condition and progress of the state.

5. To institute and collect reports therefrom, needed experiments relative to the preparation of the various soils of the state for economical culture, the cultivation of different grains, fruits and garden vegetables, the breeding and raising of stock, etc.

6. To visit, by the advice of the executive committee, or as his own judgment may direct, the various portions of the state, and to give lectures on the science and practice of agriculture, wherever and whenever they may be deemed most necessary and desirable,

7. To co operate with the superintendent of public instruction and the agent of the normal school board, for the introduction and use in the schools of Wisconsin, of standard works on agriculture and other industrial arts and sciences.

8. To attend as many as possible of the industrial exhibitions of this country, particularly the county fairs of Wisconsin; to co-operate with the president and special committee of arrangments, for the judicious preparation and management of our state exhibition; and to have the sole supervision and control of the offices of entry thereat.

9. To carefully prepare and superintend the publication of the annual report of the society to the governor of the state, embodying therein the proceedings of the State Agricultural Society, an abstract of the reports of the incorporated county agricultural societies of the state, and such reports, essays and addresses, or other matters of information, as may be calculated to enhance the value of said report.

Finally, it shall be his duty, not only by the means above named, but also through such other instrumentalities as he may devise, and the committee approve, to devote himself faithfully and unreservedly to the promotion of the industrial interests of the state.

It shall be the duty of the Treasurer —

1. To receive primarily and exclusively all moneys due the Society, from whatever source.

2. To keep a full and faithful record of all receipts of moneys coming into his hands, and of the sources whence derived, in a book specially furnished by and belonging to the Society, and to have the same open at all

reasonable times, to the inspection of any person or persons authorized by the executive committee to make such examination.

3. To likewise keep an exact record of every order by him paid, and such record must be verified by the proper vouchers showing that the sums therein named have been by him so paid.

SECTION III.

OF MEETINGS.

The executive committee shall meet annually, on the day preceeding the day on which the annual meeting of the Society is held, on Monday preceding the first Tuesday of February, and again on the first day of the annual fair,

They shall also meet at the call of the secretary, the president and a vice president of the society concurring — and may adjourn to any stated time.

SECTION IV.

OF A QUORUM.

At any meeting of the executive committee, four members thereof shall constitute a quorum for the transaction of business.

SECTION V.

OF PERMANENT COMMITTEES.

There shall be two permanent committees of the executive committee which shall be respectively styled the *Standing Committee* and the *Finance Committee.*

The Standing Committee shall consist of the president, the secretary and the treasurer, who shall have power in the recess of the Executive committee to draw orders on the treasurer for all necessary current incidental expenses. But the Executive committee shall have authority, and are hereby required to revise the proceedings or transactions of said Standing committee, and endorse or disapprove the same.

The Finance Committee shall consist of the president and treasurer, and it shall be their duty to suggest means for increasing the revenues of the Society.

They shall also have authority to invest any portion of the funds of the Society that may from time to time be set a part by the Executive committee for investment, disposing of such funds upon such terms and conditions as may be prescribed by the said Executive committee.

Each of the above named sub-committees shall be responsible for the

faithful discharge of their duties to the Executive committee, to whom an appeal may at any time be taken from their acts or decisions.

The auditing, adjusting, allowing or rejecting of all bills, claims or demands, of whatsoever nature, against the Society, and the issuing of orders upon the treasurer for payment of the same — except for the current incidental expenses of the Society, as by this section already provided for — shall devolve upon the Executive committee; and it shall be the duty of said committee to annually examine the books, papers and vouchers of the treasurer and secretary, and compare the same, and adjust the accounts between those officers and the Society, and report thereon at the annual meeting in December.

SECTION VI.

OF THE ORDER OF BUSINESS.

The following order of business shall be observed at all meetings of the Executive committee:

1. Reading of the minutes of the preceding meeting.
2. Reading of the minutes and reports of the Standing committee.
3. Reading the minutes and reports of the Finance committee.
4. Report of Auditing committee.
5. Reports from special committees.
6. Communications frnm the Secretary.
7. Communications from members of the committees.
8. Unfinished business.
9. Miscellaneous business.

This order of business may be suspended, however, at any time, by a vote of the majority of the members present.

SECTION VII.

OF THE FISCAL YEAR.

The fiscal year of this Society shall commence on the first Wednesday of December in each year, and all annual reports of the year previous shall be made up to that time.

SECTION VIII.

OF THE EXPIRATION OF THE TERMS OF OFFICE.

The terms of office of all the officers of this Society shall expire on the 31st day of December of each year.

SECTION IX.

OF AMENDMENTS.

These by-laws may be amended at any regular meeting of the Executive committee by a vote of eight of the members thereof.

MINUTES

OF

EXECUTIVE BOARD MEETINGS.

MILWAUKEE, September 15–20, 1890.

Board met every evening during fair week in the club rooms at Plankinton House, adjusting such matters as arose during the daily management of the fair.

ANNUAL DECEMBER MEETING.

TUESDAY, 8 P. M., December 2.
AGRICULTURAL ROOMS, CAPITOL.

President Mitchell called meeting to order.

Present, Messrs. Fratt, Parkinson, Clark, True, Adams, Miner, Mitchell and Newton.

On motion, Messrs. Mitchell and Newton were appointed a committee to settle on the best possible terms the claim for damages of child injured at late state fair.

No evidence being found to substantiate the claim of H. M. Benjamin to life membership in the society, the secretary was instructed to so notify the gentleman.

The following motion introduced by ex-President Fratt was carried:

Resolved, That the salary of the treasurer of this society shall be one hundred dollars per year; and thereby is hereby appropriated from the treasury one hundred dollars to Cyrus Miner for the year 1890.

Adjourned.

ANNUAL FEBRUARY MEETING.

AGRICULTURAL ROOMS, MADISON,

February 2, 7 P. M.

President Parkinson in the chair.

Present, Messrs. Fratt, Beaumont, Smith, Vaughn, Fox, Arnold, Adams, Hubbard, Newton, Flemming, McKinney, Clark, Miner, True, Parkinson.

Minutes of last Board meeting read and approved.

Ex-Sec'y Newton reported settlement made by Ex-Pres. Mitchell and himself in case of child injured on machinery shafting at late State Fair. Claim, $1,000; amount paid, $500.

Reports of superintendents read and accepted.

On motion, dates of State Fair of 1891, were decided to be September 14 to 19.

Rules of premium list for 1891, revised.

Adjourned to 9 A. M., Tuesday.

TUESDAY, Feb. 3, 9 A. M.

Meeting called to order, Pres. Parkinson in the chair.

Present, Messrs. Fratt, Beaumont, Boyd, Smith, Vaughn, Fox, Arnold, Adams, Hubbard, Newton, Flemming, McKinney, Clark, Hitt, Fisher, Miner, True and Parkinson.

Superintendents were elected as follows:

Horses — S. D. Hubbard, Mondovi.
Speed — J. G. Boyd, Milwaukee.
Cattle — A. A. Arnold, Galesville.
Sheep — C. M. Clark, Whitewater.
Swine — E. Beaumont, Hartland.
Poultry — W. Wilson, Wausau.
Agriculture — W. Fox, Baraboo.
Dairy — T. J. Flemming, Watertown.
Fruits and Flowers — B. S. Hoxie, Evansville.
Machinery — A. W. Vaughn, Lodi.
Manufacture — H. D. Hitt, Oakfield.

Fine Arts — H. C. Adams, Madison.
Women's Work — Mrs. Vie H. Campbell, Evansville.
Marshal — G. G. Cox, Mineral Point.
Forage — C. T. Fisher, Wauwatosa.
Gates — C. M. Cottrill, Milwaukee.
Transportation — A. J. Phillips, West Salem.

TUESDAY, 2 P. M.

On motion the secretary was instructed to pay taxes on Cold Spring grounds.

On motion of Mr. Arnold it was

Moved, That the committee on Legislation be requested to draft such a bill or bills to be presented to the legislature this winter for their action as in their opinion shall be for the best interest of this society and the agricultural interests of the state.

2d. That any bill looking to an appropriation for state fair grounds near the city of Milwaukee be first submitted to the leading business men of the aforesaid city and then presented to this full Board for its approval on Thursday morning at 9 A. M.

Reports of committees on Department Lists made and accepted.

Motion on instructions to secretary to pay taxes on Cold Spring grounds reconsidered.

Messrs. True, Adams and Newton were appointed a committee to decide on communication received from weather bureau.

On motion the same gentlemen were made a committee on Memorial Resolutions for members deceased the past year.

Adjourned.

WEDNEDSAY, Feb. 4, 9 A. M.

The officers of the Society were instructed to forward a petition to common council of Milwaukee for remittance of certain special taxes levied in that city.

On motion of Mr. Adams the board instructed the officers of the Society to pay taxes.

On motion of Mr. Fratt, president, secretary and treasurer were instructed to borrow such a sum of money as may be necessary to defray expenses of coming state fair.

Committee on Legislation were authorized to prepare a bill and attend to its introduction to secure relief to amount of special taxes paid in Milwaukee.

Messrs. Cottrill and Arnold were added to committee on Legislation and the drafting of bill for aid from legislature was intrusted to committee.

Adjourned subject to call of President.

SPECIAL MEETING.

AGRICULTURAL ROOMS, May 7, 1891.

Meeting called to order by President Parkinson. Present, Messrs. Mitchell, Newton, Fratt, Boyd, Hubbard, Fleming, Wilson, Beaumont, Arnold, Fox, Miner, Parkinson and True.

A committee of five, consisting of Pres. Parkinson, Treas. Miner and Secretary True, Messrs. Fratt and Cottrill were appointed, having power to take options on sites and to ascertain what can be done towards securing the required one-third of the purchase money and report to board at some meeting called by the president.

On motion of Mr. Mitchell it was voted to offer no purses for running races at next state fair.

Secretary True was authorized to lease the Madison state fair grounds on best possible terms this year.

Adjourned.

SOCIETY MEETINGS.

The annual meeting for the election of officers of the Wisconsin State Agricultural Society was held in Germania Hall, Milwaukee, Thursday, September 18, 1890.

President Mitchell in the chair. Meeting called to order and officers elected as follows:

President—A. C. Parkinson,	Columbus.
Secretary—John M. True,	Baraboo.
Treasurer—Cyrus Miner,	Janesville.

VICE-PRESIDENTS.

N. D. Fratt,	Racine.
E. Beaumont,	Hartland.
G. G. Cox,	Mineral Point.
J. G. Boyd,	Milwaukee.
J. M. Smith,	Green Bay.
A. W. Vaughn,	Lodi.
W. Fox,	Baraboo.
A. A. Arnold,	Galesville.
Wm. Wilson,	Wausau.

ADDITIONAL MEMBERS.

H. C. Adams,	Madison.
S. D. Hubbard,	Mondovi.
T. L. Newton,	Beaver Dam.
C. M. Cottrill,	Milwaukee.
T. J. Fleming,	Watertown.
M. C. Ring,	Neillsville.
H. D. McKinney,	Janesville.
C. M. Clark,	Whitewater.
H. D. Hitt,	Oakfield.
C. T. Fisher,	Wauwatosa.

The following resolution was unanimously passed:

Resolved, That our appreciation of the efficient services of the retiring president, John L. Mitchell, is as hearty as our regard for him as a man is sincere, and that we also extend to our secretary, T. L. Newton, the earnest thanks of this society for the energetic, faithful and competent manner in which he has discharged the duties of his responsible position.

Adjourned.

ANNUAL DECEMBER MEETING.

AGRICULTURAL ROOMS,
Capitol, Madison,
WEDNESDAY, December 3, 1890.

President Mitchell in the chair. Messrs. Fratt, Parkinson, Clark, Beaumont, Vaughn, Adams, Miner, Curtiss, Doyon, Eastman, Chandler, Mitchell and Newton.

President Mitchell stated the object of the meeting was for settlement with treasurer and secretary, and such other general business as might come before the society.

On motion, Messrs. Doyon, Clark and Chandler were appointed a committee to compare vouchers and statements.

On motion, Messrs. Fratt, Adams and Fleming were appointed a committee on Legislation to act with the officers during the coming session.

Committee on Accounts reported same correct. They were accepted.

Adjourned.

TREASURER'S REPORT.

To the Officers and Members of the Wisconsin State Agricultural Society:

GENTLEMEN — I have the honor to hand you herewith statement of the financial transactions of your society for the year ending December 3, 1890.

Respectfully submitted,

CYRUS MINER,
Treasurer.

Agricultural Rooms, Madison, Wis., December 3, 1890.

RECEIPTS.

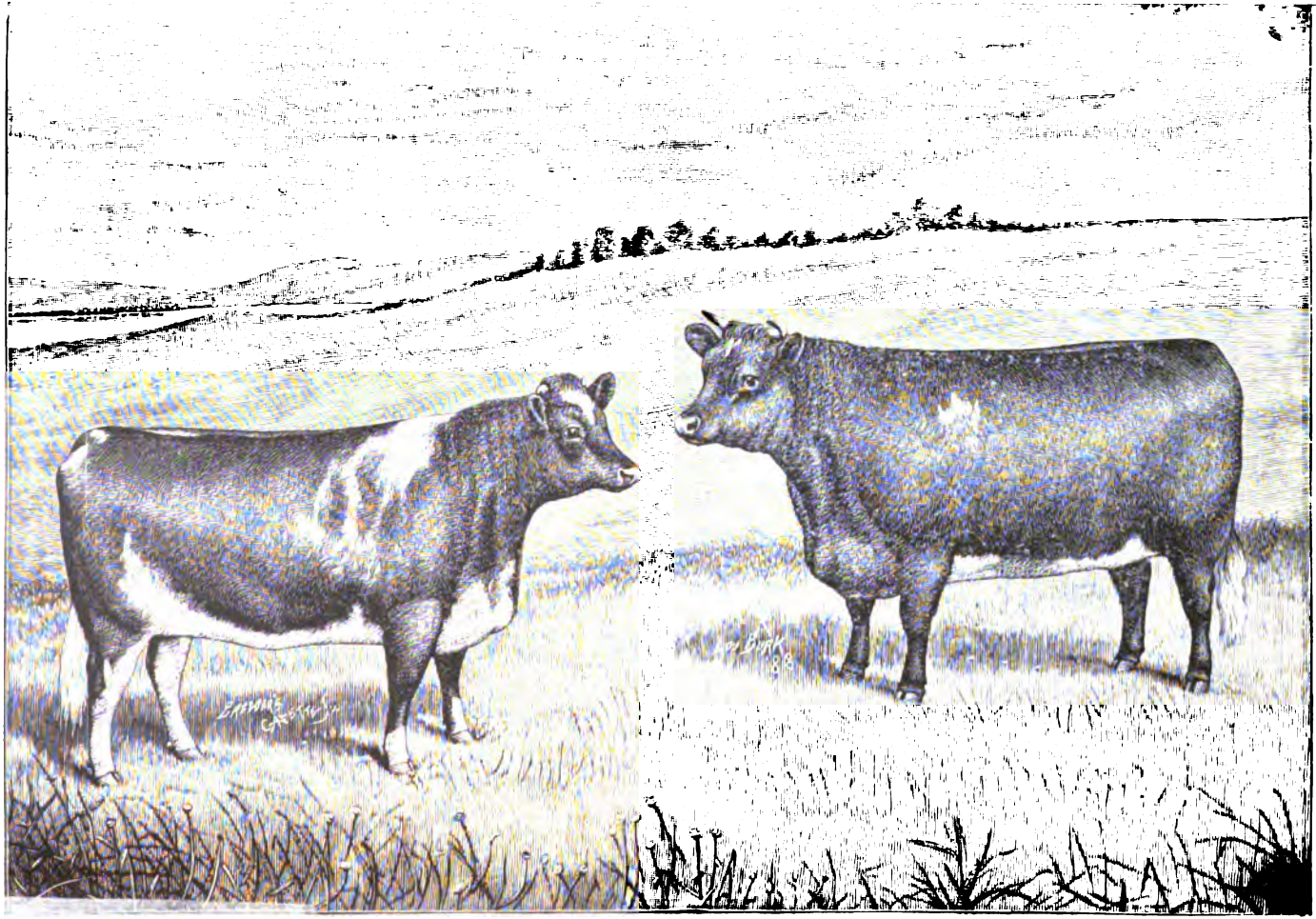
Amount from 1889	$1,402 28	
Amount from loans	3,000 00	
Amount from sale of tickets	19,798 50	
Amount from state	6,224 80	
Amount from membership	400 00	
Amount from rent of shafting	120 00	
Amount from sale of forage	167 46	
Amount from sale of gas pipe	110 25	
Amount from ground privileges	2,067 34	
Amount from special premiums	665 00	
Amount from club house rent	300 00	
Amount from secretary, entry fees	806 00	
Amount 10 per cent. on purses	3,050 00	
Amount from rent of stalls	459 00	
Amount from transportation	56 90	
		$37,626 98

DISBURSEMENTS.

Paid secretary's warrants of 1889	$180 28	
Paid warrants of current year	30,335 40	
		$30,515 68
Balance on hand		$7,111 30

SECRETARY'S WARRANT ACCOUNT.

No.	*To whom and for what issued.*	*Amount.*
1	Kentzler Bros., livery	$3 50
2	Horner, F. S., printing	1 35
3	Babbitt, C., herd book	3 50
4	West Book Co., stationery	2 20
5	Newton, T. L., secretary, salary	150 00
6	Fuller, F. L., assistant secretary, salary	83 33
7	Schwab Stamp Co., medals	36 50
8	Democrat Printing Co.	17 74
9	Western Union Telegraph Co	4 95
10	Hughes, Thomas, programmes	40 00
11	Horner, F. S., posters for convention	18 00
12	Bigelow, F. G., rent	250 00
13	Newton, T. L., secretary, salary	150 00
14	Fuller, F. L., assistant secretary, salary	83 33
15	Western Union Telegraph Co.	15 55
16	Parkinson, A. C., superintendent agricultural department	33 78
17	Williams, E. E., assistant superintendent agricultural department	17 50
18	True, J. M., expenses, board meeting	3 47
19	Boyd, J. G., expenses, board meeting	7 00
20	Fisher, C. T., expenses, board meeting	7 00
21	Clark, C. M., expenses, board meeting	10 00
22	Wilson, William, expenses, board meeting	12 50
23	Hitt, H. D., expenses, board meeting	4 77
24	Cox, G. G., expenses, board meeting	6 00
25	Knowenschild, J., merchandise	14 55
26	Arnold, A. A., expenses, board meeting	9 26
27	Beaumont, E., expenses, board meeting	6 70
28	Hubbard, S. D, expenses, board meeting	11 00
29	Miner, Cyrus, paid dinner tickets	2 25
30	Park Hotel, paid expenses of speakers	4 25
31	Void.	
32	Cosgrove Live Stock Co., premium	25 00
33	Kellogg, R. B., premium	20 00
34	Lyall & Shillings, premium	20 00
35	Newton, T. L., secretary, salary	150 00
36	Fuller, F. L., assistant secretary, salary	83 33
37	Newton & Wrenz, cloth	100 00
38	Couse, Willie, page for convention	9 00
39	W. U. Tel. Co.	3 45
40	McKinney, H. D., premium	13 50
41	Newton, T. L, secretary, salary	150 00
42	Fuller, F. L., assistant secretary, salary	83 33
43	Hastreiter, R., signs	5 00
44	W. U. Tel. Co.	5 70
45	Totto, O., clerk	3 25
46	Vaughn, A. W., expense on machinery	3 50
47	Bigelow, F. G., rent	250 00



Property of Stilson Bros., Oshkosh, Wis.

No.	To whom and for what issued.	Amount.
48	Newton, T. L., secretary, salary	$150 00
49	Fuller, F. L., assistant secretary, salary	83 33
50	W. U. Tel. Co	9 10
51	Jones, Cora, Clerk	2 55
52	Darion, E. D., freight	7 10
53	Newton, T. L., secretary, salary	150 00
54	Fuller, F. L., assistant secretary, salary	83 33
55	W. U. Tel. Co.	3 40
56	Sherman & Hutchins, printing	30 00
57	State Journal Co., blanks	15 00
58	Riverside Printing Co., printing premium list, etc	379 80
59	Newton, T. L., secretary, salary	150 00
60	Fuller, F. L., assistant secretary, salary	83 33
61	W. U. Tel. Co	1 35
62	Fair Pub. Co., entry books	23 50
63	Eastman, John, advertising expenses	100 00
64	Clough, C. E., advertising expenses	100 00
65	C. Graves, advertising expenses	100 00
66	Pritzlaff, John, tacks	6 28
67	Hughes, Thos., printing	33 00
68	Bigelow, F. G., rent	250 00
69	Newton, T. L., secretary, salary	150 00
70	Fuller, F. L., assistant secretary, salary	83 33
71	Newton & Wrenz, premium ribbon	146 90
72	W. U. Tel. Co	8 70
73	Tuthill, E. B., reporter, convention	60 00
74	Riley & Corcoran, livery	3 50
75	Newton, T. L., secretary, salary	150 00
76	Fuller, F. L., assistant secretary, salary	83 33
77	Sackett Wired Tag Co., tags	15 00
78	Clough, C. E., labor	100 00
79	Eastman, J., advertising expenses	10 00
80	Yewdale & Sons & Co., printing tickets	100 00
81	Riverside Printing Co., printing	348 75
82	Clough, C. E., labor	50 00
83	Bond, H. R. & Co., lime used at fair	13 50
84	Boyd, J. G., American Trotting Association	54 00
85	Goodrich Transportation Co., freight	9 50
86	Battles, F. S., iron ticket boxes	16 00
87	Crowl, O. H., putting up tent	10 00
88	Chambers, A. S., carpenter work	3 00
89	McGuire, M., work	6 00
90	Bach's band	50 00
91	Sheboygan band	30 90
92	Rhodes, Wm., judge sheep	5 00
93	Brodhead, E. H., premium	75 00
94	Anderson & White, race premium	50 00
95	Crawley, C., race premium	75 00
96	Williams, W. T., race premium	125 00
97	Adams, H., race premium	250 00
98	Ryan, J. S., race premium	125 00
99	Ayers, F. J., race premium	250 00

No.	To whom and for what issued.	Amount.
100	Funk, J., race premium	$75 00
101	Peterson, race premium	125 00
102	Flack, J. W., race premium	50 00
103	Kelley, T , race premium	200 00
104	Fancher, F. M., race premium	50 00
105	Blackman Bros., race premium	75 00
106	Crowl, O. H., dinner tickets	75 00
107	Void.	
108	Outhwaite, J. J., race premium	250 00
109	McKenzie, J. J., representative, Grant county	16 26
110	Dutcher, L., watchman	4 50
111	King, S., watchman	4 50
112	Lodi Cornet band	52 35
113	Smith, J. M., judge, fruit	6 80
114	Woolcott, Chas., ballonist	10 00
115	Carey, John, representative, Blake Prairie society	14 92
116	Clauder's Military Band	41 65
117	Thompson, J., representative, Polk county	28 00
118	Mihill, G., representative, Fond du Lac county	5 66
119	Knight, H., representative, Pepin county	24 50
120	Clark, E. C., representative, Trempealeau county	22 40
121	Thompson, J. E., representative, St. Croix county	26 90
122	Dey, John, representative, Outagamie county	15 92
123	Ranney, J. W., representative, Southwestern association	17 18
124	Smelser, J., representative, Iowa county	15 86
125	Smith, John, representative, Brown county	12 54
126	DeRyder, Chas, race premium	75 00
127	Potter, C. W., representative, Juneau county	15 68
128	Warner, Hans B., representative, Pierce county	26 40
129	Waite, M. W., representative, Langlade county	20 60
130	Purdy, E. S., representative, Columbia county	12 18
131	Lawrence C., judge, swine	10 00
132	Flack, J. W., race premium	50 00
133	Owens, R. J, race premium	125 00
134	Hamilton, H., representative, Marquette county	13 80
135	Hodge, S. C., representative, Green county	10 30
136	Van Wagner, F. K., representative, Vernon county	20 00
137	DeLong, H., gate attendant	17 50
138	Flanders, J. T., gate attendant	17 50
139	Charnley, Isaac, gate attendant	17 50
140	Marsland, F. H., gate attendant	17 50
141	Potts, S. D., gate attendant	15 00
142	Taylor, E. S., gate attendant	17 50
143	Buck, D., representative, Kewaunee county	14 00
144	Robertson, A. J., gate attendant	17 50
145	Oslook, J., gate attendant	17 50
146	Crowles, F. C., gate attendant	17 50
147	Gleason, J. E., representative, Rock county	13 28
148	Blake, Ed., gate attendant	17 50
149	Fitzgerald, H. M., gate attendant	17 50
150	Davidson, A., gate attendant	17 50
151	Lalor, J., gate attendant	10 00

No.	To whom and for what paid.	Amount
152	Riddle, M. S., labor	$33 84
153	McConley, J., labor	7 00
154	Ellenwood, A. P., representative, Barabso Valley Agricultural Society	14 52
155	Clinton, O. P., representative, Waukesha county	5 20
156	Riddle, J., labor	14 35
157	De Bar, J., labor	7 00
158	Van Epps, O. S., representative, Waupaca county	15 50
159	Schimal, M., use of engine	60 00
160	Conrad, C. B., ticket seller	21 00
161	Halstead, W. F., watchman	16 00
162	Tubbs, P., representative, Seymour Association	11 92
163	Brownell, I. C., ticket seller	21 00
164	Vaugh, A. W., service machinery department	70 00
165	Gardner, E. W., work, machinery department	24 00
166	Murdock, H. D., ticket seller	21 00
167	Heimstreet, E. B., ticket seller	21 00
168	Washburn, M., representative, Barron county	20 00
169	Wilson, Wm., representative, Marathon county	20 54
170	Fifield, Ed., ticket seller	21 00
171	Nicodemus, R. B., ticket seller	21 00
172	Gordon, W. R., ticket seller	21 00
173	Hutchins, A. L., ticket seller	21 00
174	Randall, F., ticket seller	21 00
175	Stevens, C. D., ticket seller	21 00
176	McKinley, J. M., representative, Price county	24 80
177	Carr, J., race premium	250 00
178	Leslie & Burwell, premium	100 00
179	Youmans, C. A., representative, Clark county	21 08
180	Arnold, A. A., superintendent cattle	53 08
181	Bartlett, S. A., premium	50 00
182	Clough, C. E., carpenter	24 00
183	Woolcott, Chas., Bolloon	390 00
184	McHenry, S. W, representative, Washington county	9 92
185	Baetz family, music	15 75
186	Beaumont, E., superintendent swine	36 56
187	Clark, C. M., superintendent sheep	43 00
188	Tratt, F. W., judge, cattle	5 00
189	Down, L., judge, horses	10 00
190	White, Geo. D., race premium	250 00
191	Robinson, C. W., race premium	250 00
192	Harrington, F. H., race premium	50 00
193	Richards, G., judge, horses	15 00
194	True, E. B., assistant superintendent horse department	17 50
195	Sherman, H. B., judge, horses	10 00
196	Void	
197	True, J. M., superintendent horse department	51 00
198	Goff, E. S., assistant superintendent horticultural department	21 00
199	Flower, J. M., race premium	75 00
200	Vogal, A., race premium	75 00
201	Ring, M. C., race premium	50 00
202	Patton, race premium	125 00
203	Smith & Russell, race premium	250 00

No.	To whom and for what issued.	Amount
204	Crowley, C., race premium	$125
205	Barrett, J., race premium	75 00
206	McLaughlin, J. H., race premium	125 00
207	Uhlien Bros,, race premium	50 00
208	Hanchett, F. P., work	36 00
209	Henwood, V., assistant fine art department	23 00
210	Hitt, H. D., superintendent manufactures	64 80
211	Jones, E. D., assistant superintendent manufactures	21 00
212	Gordon, Z. O., police	12 50
213	Seaman, S. L., judge, poultry	20 00
214	Martin, F , baggage carrier	7 50
215	Strong, R. M,, assistant superintendent poultry	20 00
216	Hoxie, B. S., superintendent horticulture	68 64
217	Adams, H. C., paid judge fine arts	10 00
218	Adams, H. C., superintendent fine arts department	58 75
219	Asch, Claude, assistant superintendent fine arts department	28 00
220	Jones, Cora, work	25 00
221	Bartels, Genevie, work	19 00
222	Hall, Fannie, work	33 00
223	Fratt, N. D., expenses board meet, etc	28 39
224	Fratt, N. D., superintendent of gates	26 50
225	Totto, O., work	9 00
226	Cox, G. G., marshal assistant and police	389 10
227	Hyland, E., work	30 00
228	Peffer, Kate, work	$35 00
229	Loeber, F. W., clerk speed department	25 00
230	Chadwick, Mary, work	23 00
231	Sands, J. W., work	45 00
232	Sands, J. W., representative, Dodge county	16 48
233	Hubbard, S. D , superintendent, transportation	67 00
234	Hastreiter, R., work	75 00
235	Plankinton House, expenses Miner and Doyon	30 75
236	Crowl, O. H., superintendent, grounds	75 00
237	Doyon, M. R., assistant treasurer	30 00
238	Miner, Cyrus, treasurer, attendance at fair	34 23
239	Waters, E., and wife, labor	12 50
240	Cox, G. G., posting bills	3 50
241	Tookey, M., labor	18 00
243	Kerney, M., labor	27 00
243	Cox, G. G., redeemed dinner tickets	5 00
244	Eastman, John, work	10 00
245	Prichard, Miss Minnie, work	35 00
246	Miner, Cyrus, paid notes	3,083 40
247	Melin, E., assistant in dairy department	15 91
248	Loomis, H. K., superintendent, dairy department	48 65
249	Walworth, M. H., premium	25 00
250	Sullivan, D., team work	40 00
251	Kinney, S., team work	14 00
252	Eckert, G., team work	6 00
253	Crumnel, J. R., team work	7 50
254	Case, Jackson J., Horse Breeders' Association money	850 00
255	Hilgendorf & Kelloge, hardware	24 78

No.	To whom and for what used.	Amount.
256	Clough, C. E., labor	$30 87
257	Mattoon, Geo., labor	32 87
258	Harkness, D. S., printing	20 00
259	Clough, C. E, labor	20 00
260	Newton, T. L., expenses 1889, 1890	198 50
261	Germania Society, use of hall	15 00
262	Thayer, A., livery	12 50
263	Chapman, T. A., & Co., goods	19 53
264	Loell & Crone, use of show cases	20 00
265	Void	
266	Riverside Printing Co., printers	21 00
267	Cream City Bill Posting Co	6 00
268	Clark's Horse Review, advertising	15 00
269	N. W. Fuel Co., fuel machinery department	82 40
270	Neidecken, H. & Co., paper	7 79
271	Hoffman & Billings, gas pipe	24 91
272	Le Count, J. M., advertising	5 00
273	Wisconsin Agriculturist, advertising	30 00
274	Patton, J. E. & Co., painting	28 54
275	Pritzlaff, J., nails	9 25
276	Chicago Horseman, advertising	43 75
277	Spirit of Turf, advertising	22 00
278	Case, P. A., labor	6 00
279	Steiner, J. K., premium	125 00
280	Austin, Ella, Andrew's special premium	5 00
281	Coe, J. S., assistant woman's department	18 00
282	Foster, Mrs. A. H., assistant woman's department	10 00
283	Easton, Mrs. E M., assistant woman's department	6 00
284	Dousman, Carl, judge	10 00
285	Wisconsin Planing Mill, lumber	155 85
286	Bothe, Wm. & Co., feed	165 40
287	Moore, H. L., forage	97 62
288	Moore, W. N., forage	53 10
289	Cushing, J. K., forage	176 58
290	Vogel, H., forage	38 57
291	Swan, S. B., forage	26 22
292	Foley, M., forage	89 37
293	Pilgrim, D. T. Jr., forage	110 41
294	Remer, Aug., cartage	12 00
295	Void	
296	Plankinton, bill rendered	106 30
297	Fisher, C. P., superintendent forage department, watch, etc	99 00
298	Foley, J. L., forage	163 80
299	Milwaukee Daily News, advertising	6 00
300	Sentinel Co., advertising	40 00
301	Banner & Volksfreund, advertising	11 00
302	Deuster, P. V. & Co., advertising	12 00
303	Allis, E. P. & Co., pulley	9 00
304	Campbell, C. H., watch	$10 00
305	Rudstone, T. P., advertising	6 00
306	Sheldon, Mrs. S. L., judge	10 00
307	Western Farmer Company, advertising	25 00

No.	To whom and for what issued.	Amount.
308	Campbell. Leo H., assistant woman's department.	$19 00
309	McGilvra, A. D., representative Sauk County	11 20
310	Whittett, John, representative Jefferson County	12 68
311	Western Union Telegraph Company	6 15
312	Sanders, J. H. & Co,, advertising	37 80
313	Western Union Telegraph Company	8 41
314	Newton, T. L., secretary, salary	150 00
315	Fuller, F. L., assistant secretary, salary	83 33
316	Milwaukee Sentinel, advertising	50 00
317	Murray & Co., tents	163 39
318	Milwaukee Journal Company, advertising	55 75
319	Yewdale, J. H. & Sons, printing	9 00
320	Woodward, S. S., services as clerk	15 00
321	Kentzler, A., livery	7 00
322	Angell, E. E., premium	55 00
323	Adamson, J. W., premium	18 00
324	Anson, S., premium	5 00
325	Allen, L. E., premium	22 00
326	Armstrong, W. E., premium	10 00
327	Amberg, Mrs. J., premium	19 00
328	Alsbacher, J., premium	11 00
329	Alsbacher, J., premium	4 00
330	Void.	
331	Bartlett, F. A., premium	53 00
332	Brabazon, J. R., premium	125 00
333	Bahr, Chas , premium	15 00
334	Barre, Mills, Creamery Co., premium	7 00
335	Bucher, H. J., premium	5 00
336	Brand Stove Company, premium	15 00
337	Buettcher & Schimel, premium	5 00
338	Browning, King & Co., premium	10 00
339	Buell, Mrs. L M , premium	13 00
340	Beebe, E. W., premium	5 00
341	Bartels, Genevieve, premium	37 00
342	Baker, Mrs. A. C., premium	2 00
343	Burgess, Mrs. L. R., premiums	13 00
344	Bates, Mrs. A. C., premium	2 00
345	Brown, Mrs. G. M., premium	2 00
346	Barker, J. B., & Son, premium	89 00
347	Benedict, A. J., premium	85 00
348	Briggs, H. A., premium	35 00
349	Breese, S., & Son, premium	32 00
350	Boyd. J. G., premium	15 00
351	Burchard, Geo., premium	5 00
352	Baker, A. E., premium	89 00
353	Cook, W. S., premium	2 00
354	Currie Bros., premium	77 00
355	Chandler, Geo., premium	85 00
356	Christian, H. C., premium	22 00
357	Chase, E., & Son, premium	2 00
358	Carman, Chas., premium	2 00
359	Criff, Geo. C., premium	16 00

No.	To whom and for what issued.	Amount.
360	Copeland & Ryder, premium	$5 00
361	Chicago Bill, premium	9 00
362	Cook, Mrs. R. H., premium	28 00
363	Conyers, Nettie, premium	2 00
364	Chubbock, Florence, premium	7 00
365	Clark, Mrs. C. L., premium	2 00
366	Cleinfust & Hall, premium	2 00
367	Campbell, Mrs. Vie H., premium	1 00
368	Chadwick, Mrs. J. A., premium	6 00
369	Clark, H. A., premium	4 00
370	Cooley, B. N., premium	141 00
371	Corey, J. M., premium	57 00
372	Cameron, S, Z., premium	12 00
373	Clark, Thomas, premium	278 00
374	Cosgrove Live Stock Co,, premium	89 00
375	De Gelke, Peter, premium	4 00
376	Davis, Geo. F., & Co., premium	21 00
377	Daniels, E, W., premium	1 00
378	Davis, Chas., premium	16 00
379	Dey, John, premium	6 00
380	Deland, H. D., premium,	20 00
381	Dennett, W. P., premium	15 00
382	Dorsch, John, premium	21 00
383	Eastman, E. L., premium	5 00
384	Esch, John & Son, premium	5 00
385	Void.	
386	Easton, Mrs. C. P., premium	17 00
387	Fox, Wm., premium	98 00
388	Frazer, A. J., premium	2 00
389	Frick, John, premium	27 00
390	Frazer, A. F., premium	20 00
391	Fitch, Mrs. Mary, premium	7 00
392	Foster, Mrs. A H., premium	29 00
393	Frowy, Mrs. Adam, premium	4 00
394	Void.	
395	Fisher, Mrs. C. P., premium	8 00
396	Flack, J. W., premium	28 00
397	Gale & Son, premium	47 00
398	Grengo, A. L., premium	36 00
399	Ganes, J. W., premium	3 00
400	Green, Chas. H., premium	29 00
401	Gimbel Bros, premium	25 00
402	Gilson, C. A., premium	4 00
403	Guenther, Mrs. Geo., premium	11 00
404	Graff, Mrs. H. J., premium	2 00
405	Goodyear, Miss Belle, premium	2 00
406	Grier, J. M., premium	42 00
407	Grover, F. B., premium	8 00
408	Griffith, C. N., premium	28 00
409	Gillett & Son, premium	158 00
410	Hirschinger, C.	75 00
411	Harfand, Wm., premium	25 00

No.	To whom and for what issued.	Amount.
412	Hay, A. J., premium	$31 00
413	Hoard, A. R., premium	30 00
414	Hodgson, Maud, premium	10 00
415	Henny Buggy Co., premium	28 00
416	Hanson Furniture Co., premium	20 00
417	Eau Claire Leader, advertising	10 00
418	Hilgendorf, Kelloge & Co., premium	5 00
419	Hess, Henry, premium	12 00
420	Hamilton, Mrs. Jas., premium	19 00
421	Hilman, M. F., premium	5 00
422	Hutchings, Thos E., premium	18 00
423	Higgins, Miss D., premium	2 00
424	Hounsell, Mrs. S., premium	290
425	Hill, Chas. F., premium	15 00
426	Harding, Geo., premium	114 00
427	Hacker, T. L., premium	154 00
428	Heil, J., premium	45 00
429	Hickey & Sons, premium	23 00
430	Hinckley, F. D., premium	63 00
431	Jenney, James, premium	23 00
432	Jeffry, Geo., premium	33 00
433	Jackwitz, Hilger, premium	4 00
434	Johnson, Riley, premium	2 00
435	Jones, D. B., premium	24 00
436	Kellogg, Geo. J., premium	8 00
437	Kingsley, C. C., premium	22 0C
438	Kellsmeier, F. M., premium	20 00
439	Kavanaugh, Mrs. J., premium	99 00
440	Kingsbury, Mrs. J. W., premium	3 00
441	Kellogg, Rufus B., premium	109 00
442	Klein, Geo., premium	203 00
443	Kingman, R. S., premium	51 00
444	Love Bros., premium	28 00
445	Loomis, J. C., premium	23 00
446	Lammen, S., premium	5 00
447	Lytle, Geo., premium	21 00
448	Lowe, J. C. & Sons, premium	19 00
449	Lawrie, James, premium	5 00
450	Leslie & Burwell, premium	253 00
451	Leferer & Johnson, premium	45 00
452	McGowan, E. S., premium	32 00
453	Mil. Buggy Co., premium	16 00
454	Michigan Buggy Co., premium	27 00
455	Matthews Bros. premium	46 00
456	Michigan Buggy Co., premium	3 00
457	Michelef, Anna, premium	1 00
458	Mayhew, Allie R., premium	5 00
459	McKeown, Geo., premium	259 00
460	Maxham, H. N., premium	46 00
461	Mill, R. H., premium	42 00
462	Milton, John, premium	145 00
463	Morley, N. W., premium	30 00

No.	To whom and for what issued.	Amount.
464	McGeoch, Peter, premium	$62 00
465	McKinney, H. D., premium	10 00
466	Martin, J. W,, premium	149 00
467	McConnell, W. N., premium	113 00
468	Morse & Son, premium	249 00
469	Noyes, H. J., premium	5 00
470	Nat. Sheet Metal Mfg. Co,. premium	5 00
471	Nellson, Ida J., premium	14 00
472	Void	.....
473	Nicholson, Mrs. John, premium	28 00
474	Palmer & Nobleb, premium	96 00
475	Plumb, J. C., premium	2 00
476	Palmer, J. S,, premium	108 00
477	Peffer, Kate, premium	9 00
478	Pilgrim, D. T., premium	18 00
479	Pfiefer, Jas., premium	5 00
480	Poppert, Geo., premium	10 00
481	Void	.....
482	Pratt, Mrs. Orris, premium	53 00
483	Palmer, E. E., premium	5 00
484	Pierce, Mrs. Chloe, premium	3 00
485	Peters, Dawson, premium	3 00
486	Plank, C. W., premium	58 00
487	Pitcher, J. K., premium	48 00
488	Pabst, Fred, premium	170 00
489	Perry, Eli, premium	50 00
490	Plowman, Jabez, premium	20 00
491	Parkinson, A. C., premium	20 00
492	Roberts, E. J., premium	76 00
493	Ringrose, G. W., premium	59 00
494	Root, Mrs. C. H., premium	54 00
495	Rabb, Miss J., premium	9 00
496	Roebel & Reinhart, premium	90 00
497	Rogers, Birdie M., premium	5 00
498	Renk, Bertha, premium	11 00
499	Rood, Mrs. G., premium	13 00
500	Rowell, Mrs. M. M., premium	2 00
501	Reynolds, Mrs. E. M., premium	2 00
502	Reid Bros., premium	110 00
503	Rogers, H. G., premium	15 00
504	Richmond, E. W., premium	90 00
505	Rawson, E. L., premium	45 00
506	Rust Bros., premium	184 00
507	Sheldon, M. V., premium	18 00
508	Stueble, B., premium	8 00
509	Snyder, E., premium	12 00
510	Smith, T. C. & Co., premium	23 00
511	Sechler, D. M., premium	5 00
512	Staer, H. A., premium	3 00
513	Slocum, Miss E., premium	3 00
514	Smith, Mrs. A. D., premium	4 00

No.	*To whom and for what issued.*	*Amount.*
515	Shea, Mrs. E., premium	$4 00
516	Sutton, Mrs. H. E., premium	1 00
517	Swan, Mrs. W. C., premium	6 00
518	Stafford, Mrs. A. I., premium	6 00
519	Stone & Harris, premium	85 00
520	Siver, H. F., premium	87 00
521	Skinner, Henry, premium	100 00
522	Stitt, Ed., premium	12 00
523	Stellah, Henry, premium	13 00
524	Sanger, C. M. & Son, premium	161 00
525	Smith, L. S., premium	48 00
526	Toole, Wm., premium	7 00
527	Turrill, Frank, premium	10 00
528	Thomas, E. B., premium	94 00
529	Thomas, E. B., premium	10 00
530	Thompson, W. W., premium	78 00
531	Tindall, F., premium	9 00
532	Thomas, J. M., premium	12 00
533	Tenney, Mrs. A. L., premium	16 00
534	Tenney, Mrs. S. A., premium	20 00
535	Trapp, Mrs Floy M., premium	71 00
536	Void	
537	Trodupp, Chas., premium	70 00
538	Tratt, F. W., premium	256 00
539	Underwood, Leroy, premium	3 00
540	Uihlien Bros., premium	132 00
541	Uihlien Bros., premium	30 00
542	Van Camp. J. B., premium	2 00
543	Varner, Allan, premium	181 00
544	Warner, A. D., premium	66 00
545	Wrightman, E., premium	17 00
546	West, H. P., premium	55 00
547	Ward, H. P., premium	34 00
548	Washburn, N., premium	10 00
549	Wynoble, C., premium	27 00
550	Wynoble, E., premium	2 00
551	Witke, Robt., premium	35 00
552	Wiengandt, A., premium	2 00
553	Winding, Jennie, premium	1 00
554	Wadsworth, Jennie, premium	2 00
555	Warren, Walter, premium	23 00
556	Warner, H. M., premium	5 00
557	Walworth, M. H., premium	77 00
558	Wegge, J. F., premium	15 00
559	Welch, J. E., premium	23 00
560	Wolf, Henry, premium	20 00
561	Williams, J. J., premium	66 00
562	Yorgey & Rich, premium	12 00
563	Youmans, C. A., premium	8 00
564	Zimmerman, J. C., premium	8 00
565	Clough, C. E., labor material, etc	160 00

No.	To whom and for what issued.	Amount.
566	Hubbard. C., labor on grounds	$51 98
567	Void	
568	Herold, advertising	52 00
569	Breese, H. & Son	10 00
570	Campbell, Mrs. Vie H., superintendent Woman's department	57 80
571	Boynton, A. L., livery for treasurer	12 00
572	Cramer, Aikins & Cramer, advertising	10 50
573	White Sewing Machine Co., premium	10 00
574	Renk, Bertha, premium	1 00
575	Plankinton House, board McKinney	15 00
576	Swan, Mrs. W. E., premium	25 00
577	McConnell, W. N., premium	100 00
578	Morse & Son, premium	100 00
579	Tratt, F. W., premium	100 00
580	Ambrecht, Mrs. John, premium	15 00
581	Warren, Mrs. D., premium	10 00
582	Weisart, Florence, premium	10 00
583	Hall, Frances M., labor	10 00
584	Newton, Mrs. Tina, premium	13 00
585	Clough, C. E., whitewashing	113 18
586	Eastman, John, advertising	98 30
587	Crowle, O. H., paid dinner tickets	333 34
588	Pierson, M. W., post bills	10 80
589	Austin, Ella, premium	14 00
590	Patton, J. C. & Co., sundries	8 43
591	Gross, Philip, locks and nails	8 25
592	Wylie, Geo., assistant superintendent cattle	24 50
593	Grimes, Charles, advertising	28 73
594	Western Union Telegraph Co	2 40
595	Germania Publishing Co., advertising	40 00
596	Democrat Printing Co., printing	19 25
597	Shepard, W. B., bill posting	3 75
598	Chapman, T. A. cloth art department	20 29
599	Kellogg, Geo. G., night watchman	4 50
600	Bigelow, F. G., rent of grounds	250 00
601	Newton, T. L., secretary, salary	150 00
602	Fuller, F. L., assistant secretary, salary	83 33
603	Hastreiter, Robert, clerical work	10 00
604	Uihlein Bros., premium	100 00
605	Cooley, B. N., special	25 00
606	Parkinson, A. C., superintendent agriculture	40 00
607	Cook, Hobart, assistant superintendent agriculture	15 00
608	Bellock, A. M., assistant superintendent of agriculture	15 00
609	Hughes, Thos., printing	3 50
610	Gillett, E., premium	8 00
611	Wadsworth, T. D., work and team	11 00
612	Breitruck, C. J., refunded entry fee	2 00
613	Milwaukee Industrial Exposition Association, chairs	24 50
614	Western Farmer, subscription	1 00
615	Schwaab Stamp Company, medals	52 58
616	Western Union Telegraph Company	2 65

No.	*To whom and for what issued.*	*Amount*
617	Sherman & Hutchins, printing	$21 00
618	Lyall James, judge cattle	10 00
619	Clough, C. E., salt and freight	5 12
620	Newton, T. L., secretary, salary	150 00
621	Fuller, F. L., assistant secretary, salary	83 33

We have examined the vouchers of Treasurer's report and find same correct.

M. R. DOYON,
J. C. CHANDLER,
C. M. CLARK.

MADISON, Wis., December 3, 1890.

LIST OF AWARDS AT STATE FAIR, 1890.

DEPARTMENT A — HORSES.

CLASS 1 — *Percherons.*

STALLIONS.

Best stallion 4 years and over.

No. 1090	E. B. Thomas, Dodge's Corners	$25 00
45	H. A. Briggs, Elkhorn	15 00

Best stallion 3 years and under 4.

45	H. A. Briggs, Elkhorn	20 00
566	Rufus B. Kellogg, Green Bay	12 00

Best stallion 2 years and under 3.

738	N. W. Morley, Baraboo	20 00
185	Fred Pabst, Milwaukee	10 00

Best stallion 1 year and under 2.

566	Rufus B. Kellogg, Green Bay	15 00
566	Rufus B. Kellogg, Green Bay	8 00

Best stallion colt, under 1 year.

566	Rufus B. Kellogg, Green Bay	15 00

MARES.

Best brood mare and colt.

185	Fred Pabst, Milwaukee	20 00
566	Rufus B. Kellogg, Green Bay	15 00

Best mare 4 years old and over.

185	Fred Pabst, Milwaukee	20 00
185	Fred Pabst, Milwaukee	15 00

Best mare 3 years old and under 4.

185	Fred Pabst, Milwaukee	20 00
738	N. W. Morley, Baraboo	10 00

Best mare 2 years old and under 3.

566	Rufus B. Kellogg, Green Bay	15 00
185	Fred Pabst, Milwaukee	8 00

Best filly 1 year old and under 2.

566	Rufus B. Kellogg, Green Bay	$15 00
566	Rufus B. Kellogg, Green Bay	8 00

Best filly under 1 year.

185	Fred Pabst, Milwaukee	12 00
566	Rufus B. Kellogg, Green Bay	6 00

BREEDING RINGS.

Best breeding stallion as shown by five of his colts, either sex, under 4 years old.

No. 185 Fred Pabst, Milwaukee.....Gold Medal

Best brood mare as shown by three of her colts, either sex under 4 years

185 Fred Pabst, Milwaukee.....Gold Medal

CLASS 2—*Clydesdales.*

STALLIONS.

Best stallion 4 years old and over.

No. 980	Reid Bros., Janesville	$25 00
7	I. L. Alsbacher, Mauston	15 00

Best stallion 3 years old and under 4.

980	Reid Bros., Janesville	20 00
724	Peter McGeoch, Milwaukee	12 00

Best stallion 3 years old and under 3.

567	Geo. Klein, Fort Atkinson	20 00
1056	H. F. Siver, Russell, Ill	10 00

Best stallion 1 year old and under 2.

567	Geo. Klein, Fort Atkinson	10 00
567	Geo. Klein, Fort Atkinson	8 00

MARES.

Best brood mare and colt.

No. 724	Peter McGeogh, Milwaukee	$20 00
567	George Klein, Fort Atkinson	15 00

Best mare 4 years and over.

567	George Klein, Fort Atkinson	20 00
1056	H. F. Siver, Russell, Ill	12 00

Best mare 3 years and under 4.

No. 724	Peter McGeoch, Milwaukee	$20	00
724	Peter McGeoch, Milwaukee	10	00

Best mare 2 years and under 3.

1056	H. F. Siver, Russell, Ill.	15	00

Best filly 1 year and under 2.

567	Geo. Klein, Fort Atkinson	15	00
1055	Henry Skinner, Hebron, Ill	8	00

Best filly under 1 year.

567	Geo. Klein, Fort Atkinson	12	00

BREEDING RINGS.

Best breeding stallion as shown by five of his colts either sex under 4 years old.

No. 1056 H. F. Siver, Russell, Ill. ..... Gold medal.

Best brood mare as shown by three of her colts, either sex under 4 years old.

569 Geo. Klein, Fort Atkinson ..... Gold medal.

CLASS 3 — *English Shires.*

STALLIONS.

Best stallion 4 years and over.

No. 900	Eli Perry, Waupun	$25	00
980	Reid Bros., Janesville	15	00

Best stallion 3 years and under 4.

980	Reid Bros., Janesville	20	00
1090	E. B. Thomas, Dodge's Corners	12	00

Best stallion colt under 1 year.

1055	Henry Skinner, Hebron, Ill.	15	00

MARES.

Best brood mare and colt.

No. 1055	Henry Skinner, Hebron, Ill	$20	00

Best mare 4 years and over.

1055	Henry Skinner, Hebron, Ill.	20	00

Best mare 2 years and under 3.

No.	980	Reid Bros., Janesville	$15 00

Best filly 1 year old and under 2.

	1055	Henry Skinner, Hebron, Ill	15 00

CLASS 4.— *Other Pure Bred Draft Horses not Included in Classes 1, 2, 3.*

STALLIONS.

Best stallion 4 years and over.

No.	900	Eli Perry, Waupun	$25 00

Best stallion 3 years and under 4.

	893	Jabez Plowman, Weyauwega	20 00

CLASS 5— *Cleveland Bays, French Coach, Hackneys and Oldenburgs.*

STALLIONS.

Best stallion 4 years and over.

No.	432	J. Heil, Milwaukee	$25 00
	980	Reid Bros., Janesville	15 00

Best stallion 3 years and under 4.

	432	J. Heil, Milwaukee	20 00

CLASS 6— *Trotting Horses.*

STALLIONS.

Best stallion 4 years and over.

No.	1105	Uihlein Bros., Truesdell	$25 00
	1105	Uihlein Bros., Truesdell	15 00

Best stallion 3 years and under 4.

	905	A. C. Parkinson, Columbus	20 00
	1077	Ed. Stitt, Lake Geneva	12 00

Percheron Horses, Property of Pabst Stock Farm, Milwaukee, Wis.

Best stallion 2 years and under 3.

No. 1105	Uihlein Bros., Truesdell	$20 00
254	J. W. Flack, Milwaukee	10 00

Best stallion 1 year and under 2.

1105	Uihlein Bros., Truesdell	15 00

MARES.

Best mare 4 years and over.

No. 1105	Uihlein Bros., Truesdell	20 00
111	S. Y. Cameron, Milwaukee	12 00

Best mare 3 years and under 4.

185	Fred Pabst, Milwaukee	20 00
747	H. D. McKinney, Janesville	10 00

Best mare 2 years and under 3.

1105	Uihlein Bros., Truesdell	15 00
254	J. W. Flack, Milwaukee	8 00

Best mare 1 year and under 2.

1105	Uihlein Bros., Truesdell	15 00

Best filly under 1 year.

1105	Uihlein Bros., Truesdell	12 00

BREEDING RINGS.

Best breeding stallion, as shown by five of his colts, either sex under 4 years.

No. 1105	Uihlein Bros., Truesdell	Gold Medal.

CLASS 7.— *Grade Draft Horses.*

Best pair mares or geldings.

No. 567	Geo. Klein, Fort Atkinson	$20 00
567	Geo Klein, Fort Atkinson	10 00

Best brood mare and colt.

567	Geo. Klein, Fort Atkinson	20 00
1090	E. B. Thomas, Dodge's Corners	10 00

Best mare or gelding 4 years and over.

1055	Henry Skinner, Hebron, Ills	12 00
567	Geo. Klein, Fort Atkinson	6 00

Best mare or gelding 3 years and under 4.

No.	567	Geo. Klein, Fort Atkinson	$12 00

Best filly or gelding 2 years and under 3.

	567	Geo. Klein, Fort Atkinson	10 00

Best filly or gelding 1 year and under 2.

	1055	Henry Skinner, Hebron, Ill	10 00

Best sucking colt or filly.

	567	Geo. Klein, Fort Atkinson	10 00
	1090	E. B. Thomas, Dodge's Corners	5 00

CLASS 9 — *Grade Roadsters.*

Best brood mare and colt.

No.	56	Sam Breese, Waukesha	20 00

Best mare or gelding 4 years and over.

	56	Sam Breese, Waukesha	13 00

Best mare or gelding 3 years and under 4.

	328	J. M. Grier, Milwaukee	12 00

Best sucking colt or filly.

	56	Sam Breese, Waukesha	10 00

CLASS 10 — *Heavy Draft Horses.*

Best pair of mares or geldings weighing 3,200 pounds or over.

No.	185	Fred Pabst, Milwaukee	20 00
	567	Geo. Klein, Fort Atkinson	10 00

CLASS 11 — *Matched Horses — Roadsters.*

Best pair matched carriage horses, not under 15 hands 3 inches.

No.	1105	Uihlein Bros., Truesdell	$25 00
	51	J. G. Boyd, Milwaukee	15 00

Best single carriage horse or mare, not under 15 hands 3 inches.

No. 328	J. M. Grier, Milwaukee	$20	00
254	J. W. Flack, Milwaukee	10	00

Best pair roadsters.

982	H. G. Rogers, Milwaukee	15	00
339	F. B. Grover, Rolling Prairie	9	00

Best single roadster.

328	J. M. Grier, Milwaukee	10	00
654	James Lawrie, Milwaukee	5	00

CLASS 12 — *Saddle Horses.*

Best saddle horse.

No. 185	Fred Pabst, Milwaukee	$25	00

Speed Class.

2:33 Class. Time, 2:25, 2:26, 2:30.

Cyclone—H. Adams, St. Paul	$250	00
Addie Hayes—W. T. Williams, Racine	125	00
Josslyn—C. Crawley, Ishpiming, Mich	75	00
Scotsman—W. Sanderson, Milwaukee	50	00

2:33 Class. Time, 2:28¼, 2:29¼, 2:27¼.

Nellie D—Tom Kelly, Minneapolis	250	00
Minnie Whitston—J. Peterson, Black River Falls	125	00
Dirigo—Jno. Funk, Henderson, Ky	75	00
Dick Lee—Jno. Lee, Milwaukee	50	00

2:20 Class. Time, 2:26½, 2:22½, 2:26, 2:26½.

Coloana Sprague—T. S. Ayers, Burlington	250	00
Marval—J. S. Ryan, St. Paul	125	00
Magna Wilkes—E. H. Brodhead, Milwaukee	75	00

2:28 Class. Time, 2:22½, 2:22½, 2:26½, 2:25.

Lena H—J. P. Outhwait, Ishpeming, Mich	250	00
Tartar—C. T. Bradley, Milwaukee	125	00
Moody—Chas. De Ryder, Sioux Falls, Dak	75	00
Rosa C.—F. N. Fauchar, Hillsdale, Mich	50	00

2:40 Class. Time, 2:30, 2:30½, 2:31½, 2:35½, 2:38½.

Strattford—James Carr, St. Paul	$250 00
Lady Jane—R. G. Owens, Dodgeville	125 00
Abram—J. M. Thomas, Oconomowoc	75 00
Marion—Uihlein Bros., Truesdell	50 00

FREE FOR ALL PACING.

Time, 2:21¼, 2:19½, 2:23½.

Simmie—C. W. Robinson, Peoria	250 00
John M.—J. H. McLaughlin, Milwaukee	125 00
Skylark—C. De Ryder, Sioux Falls, S. Dak	75 00
White Cloud—J. W. Flack, Milwaukee	50 00

3:00 Class. Time, 2:31, 2:29¾, 2:31, 2:31¼, 2:30½, 2:32½.

Decorah—S. & B., La Crosse	250 00
Capt. O.—O. Crawley, Ishpeming, Mich	125 00
Joe Bassett, Jr.—J. Bassett, Lake Geneva	75 00
Gray Dawn—M. C. Ring, Neillsville	50 00

2:24 Class. Time, 2:26¼, 2:24½, 2:25½.

Brilliant—Geo. D. White, Whitewater	250 00
Black Cloud, Jr.—J. Patten, Appleton	125 00
Duke—A. Vogel, Columbus	75 00
Frank P.—F. H. Huntington, Peoria	50 00

DEPARTMENT B.—CATTLE.

CLASS 14.—*Short-horns.*

Best bull, 3 years and over.

No. 1043	C. M. Sanger & Son, Waukesha	$20 00
1126	Allan Varnar, Indianola, Ind	15 00
123	Geo. F. Davis & Co., Dyer, Ind	8 00

Best bull, 2 years and under 3.

1043	C. M. Sanger & Son, Waukesha	15 00

Best bull, 1 year and under 2.

1043	C. M. Sanger & Son, Waukesha	10 00
1043	C. M. Sanger & Son, Waukesha	8 00

Best bull calf, over 6 and under 12 months.

1043	C. M. Sanger & Son, Waukesha	8 00
1043	C. M. Sanger & Son, Waukesha	5 00

Best cow, 3 years and over.

1126	Allan Varnar, Indianola, Ind	20 00
1126	Allan Varnar, Indianola, Ind	15 00
1043	C. M. Sanger & Son, Waukesha	8 00

Best cow, 2 years and under 3.

1043	C. M. Sanger & Son, Waukesha	15 00
1126	Allan Varnar, Indianola, Ind	10 00

Best heifer, 1 year and under 2.

1043	C. M. Sanger & Son, Waukesha	10 00
1126	Allan Varnar, Indianola, Ind	8 00

Best heifer calf, over 6 and under 12 months.

1126	Allan Varnar, Indianola, Ind	8 00
1126	Allan Varnar, Indianola, Ind	5 00

Best bull and four of his get.

1126	Allan Varnar, Indianola, Ind	25 00
1043	C. M. Sanger & Son, Waukesha	15 00

SWEEPSTAKE HERD.

Best herd of Short Horns consisting of a bull 2 years old and over, and four females, one cow 3 years and over, heifer 2 and under 3, heifer 1 and under 2, heifer over 6 and under 12 months old.

No. 1126	Allan Varnar, Indianaola, Ind	$50 00
1043	C. M. Sanger & Son, Waukesha	25 00

SWEEPSTAKES.

Best cow, 2 years and over.

No. 1126	Allan Varnar, Indianapolis, Ind	25 00

Best bull, 1 year old and over.

1043	C. M. Sanger & Son, Waukesha	25 00

CLASS 15.—*Jerseys.*

Best bull, 3 years and over.

No. 1231	Henry Wolf, Waukesha	20 00
563	R. S. Kingman, Sparta	15 00
327	C. N. Griffith, Whitewater	8 00

Best bull, 2 years and under 3.

1041	L. C. Smith, Whitewater	15 00
327	C. N. Griffith, Whitewater	10 00
729	W. N. McConnell, Ripon	5 00

Best bull, 1 year and under 2.

327	C. N. Griffith, Whitewater	10 00
414	F. D. Hinkley, Milwaukee	8 00

Best bull calf, over 6 and under 12 months.

563	R. S. Kingman, Sparta	8 00
563	R. S. Kingman, Sparta	5 00

Best cow, 3 years and over.

647	Lefeber & Johnson, North Greenfield	20 00
563	R. S. Kingman, Sparta	15 00
729	W. N. McConnell, Ripon	8 00

Best cow, 2 years and under 3.

729	W. N. McConnell, Ripon	15 00
414	F. D. Hinkley, Milwaukee	10 00
44	G. W. Burchard, Fort Atkinson	5 00

Best heifer, 1 year and under 2.

No.	729	W. N. McConnell, Ripon	$10 00
	563	R. S. Kingman, Sparta	8 00

Best heifer calf, over 6 and under 12 months.

	1041	L. C. Smith, Whitewater	8 00
	414	F. D. Hinkley, Milwaukee	5 00

Best bull and four of his get.

	729	W. N. McConnell, Ripon	25 00
	414	F. D. Hinkley, Milwaukee	15 00

SWEEPSTAKES HERD.

Best herd of Jerseys consisting of a bull 2 years old and over, and four females, one cow 3 years and over, heifer 2 and under 3, heifer 1 and under 2, heifer over 6 and under 12 months old.

No.	729	W. N. McConnell, Ripon	50 00
	414	F. D. Hinkley, Milwaukee	25 00

SWEEPSTAKES.

Best cow, 2 years and over.

No.	647	Lefeber & Johnson, North Greenfield	25 00

Best bull, 1 year and over.

	1041	L. C. Smith, Whitewater	25 00

CLASS 16 — *Devons.*

Best bull, 3 years and over.

No.	746	J. W. Morse & Son, Verona	20 00
	965	E. L. Rawson, Oak Creek	15 00
	72	A. E. Baker, Beaver Dam	8 00

Best bull, 2 years and under 3.

	746	J. W. Morse & Son, Verona	15 00
	72	A. E. Baker, Beaver Dam	10 00
	965	E. L. Rawson, Oak Creek	5 00

Best bull, 1 year and under 2.

	72	A. E. Baker, Beaver Dam	10 00
	746	J. W. Morse & Son, Verona	8 00

Best bull calf, over 6 and under 12 months.

No.	72	A. E. Baker, Beaver Dam	$8 00
	965	E. L. Rawson, Oak Creek	5 00

Best cow, 3 years and over.

	746	J. W. Morse & Son, Verona	20 00
	746	J. W. Morse & Son, Verona	15 00
	72	A. E. Baker, Beaver Dam	8 00

Best cow, 2 years and under 3.

	746	J. W. Morse & Son, Verona	15 00
	72	A. E. Baker, Beaver Dam	10 00
	955	E. L. Rawson, Oak Creek	5 00

Best heifer, 1 year and under 2.

	746	J. W. Morse & Son, Verona	10 00
	746	J. W. Morse & Son, Verona	8 00

Best heifer calf, over 6 and under 12 months.

	746	J. W. Morse & Son, Verona	8 00
	746	J. W. Morse & Son, Verona	5 00

Best bull and four of his get.

	746	J. W. Morse & Son, Verona	25 00
	965	E. L. Rawson, Oak Creek	15 00

SWEEPSTAKES HERD.

Best herd of Devons consisting of a bull 2 years old and over, and four females, one cow 3 years and over, heifer 2 and under 3, heifer 1 and under 2, heifer over 6 months and under 12 months old.

No.	746	J. W. Morse & Son, Verona	$50 00
	72	A. E. Baker, Beaver Dam	25 00

SWEEPSTAKES.

Best cow 2 years and over.

No.	746	J. W. Morse & Son, Verona	$25 00

Best bull 1 year and over.

	746	J. W. Morse & Son, Verona	25 00

CLASS 17.— *Holsteins.*

Best bull 3 years and over.

No.			
	330	Gillett & Son, Rosendale	$20 00
	969	Rust Bros., North Greenfield	15 00

Best bull 2 years and under 3.

	330	Gillett & Son, Rosendale	15 00
	969	Rust Bros., North Greenfield	10 00
	425	J. E. Hickey & Sons, Whitewater	5 00

Best bull 1 year and under 2.

	425	J. E. Hickey & Sons, Whitewater	10 00
	425	J. E. Hickey & Sons, Whitewater	8 00

Best bull calf over 6 and under 12 months.

	969	Rust Bros., North Greenfield	8 00
	330	Gillett & Son, Rosendale	5 00

Best cow 3 years and over.

	969	Rust Bros., North Greenfield	20 00
	330	Gillett & Son, Rosendale	15 00
	969	Rust Bros., North Greenfield	8 00

Best cow 2 years and under 3.

	969	Rust Bros., N. Greenfield	15 00
	330	Gillett & Son, Rosendale	10 00
	1045	Henry Stelloh, Milwaukee	5 00

Best heifer 1 year and under 2.

	330	Gillett & Son, Rosendale	10 00
	1045	Henry Stelloh, Milwaukee	8 00

Best heifer calf over 6 and under 12 months.

	330	Gillett & Son, Rosendale	8 00
	969	Rust Bros., North Greenfield	5 00

Best bull and 4 of his get.

	330	Gillett & Son, Rosendale	25 00
	969	Rust Bros., North Greenfield	15 00

Best grade cow 2 years and over, get of registered sire.

	969	Rust Bros., North Greenfield	8 00
	969	Rust Bros., North Greenfield	5 00

SWEEPSTAKES HERD.

Best herd of Holstein's, consisting of a bull 2 years old and over and four females, one cow 3 years and over, heifer 2 years and under 3, heifer 1 year and under 2, heifer over 6 and under 12 months.

No. 969	Rust Bros., North Greenfield	$50 00
330	Gillett & Son, Rosendale	25 00

SWEEPSTAKES.

Best cow 2 years and over.

969	Rust Bros., North Greenfield	25 00

Best bull 1 year and over.

330	Gillett & Son, Rosendale	25 00

CLASS 18—*Guernseys.*

Best bull 3 years and over.

1089	F. W. Tratt, Whitewater	$20 00
430	T. L. Hacker, Madison	15 00

Best bull 2 years and under 3.

1089	F. W. Tratt, Whitewater	15 00
430	T. L. Hacker, Madison	10 00

Best bull, 1 year and under 2.

1089	F. W. Tratt, Whitewater	10 00
430	T. L. Hacker, Madison	8 00

Best bull calf, over 6 and under 12 months.

1089	F. W. Tratt, Whitewater	8 00
430	T. L. Hacker, Madison	5 00

Best cow, 3 years and over.

1089	F. W. Tratt, Whitewater	20 00
430	T. L. Hacker, Madison	15 00
1089	F. W. Tratt, Whitewater	8 00

Best cow, 2 years and under 3.

1089	F. W. Tratt, Whitewater	15 00
430	T. L. Hacker, Madison	10 00
1089	F. W. Tratt, Whitewater	5 00

Best heifer, 1 year and under 2.

No. 1089	F. W. Tratt, Whitewater	$10 00
430	T. L. Hacker, Madison	8 00

Best heifer calf, over 6 and under 12 months.

430	T. L. Hacker, Madison	8 00
1089	F. W. Tratt, Whitewater	5 00

Best bull and four of his get.

430	T. L. Hacker, Madison	25 00
1089	F. W. Tratt, Whitewater	15 00

SWEEPSTAKES HERD.

Best herd of Guernseys consisting of a bull, 2 years old and over, and four females, one cow 3 years and over, heifer 2 and under 3 years, heifer 1 and under 2, heifer over 6 and under 12 months.

1089	F. W. Tratt, Whitewater	$50 00
1089	F. W. Tratt, Whitewater	25 00

SWEEPSTAKES.

Best cow, 2 years and over.

1089	F. W. Tratt, Whitewater	$25 00

Best bull, 1 year and over.

1089	F. W. Tratt, Whitewater	25 00

CLASS 20 — *Galloways and Polled Angus.*

Best bull, 3 years and over.

No. 641	Leslie & Burwell, Cottage Grove	$20 00
962	E. W. Richmond, Columbus	15 00

Best bull, 2 years and under 3.

641	Leslie & Burwell, Cottage Grove	15 00

Best bull, 1 year and under 2.

641	Leslie & Burwell, Cottage Grove	10 00
641	Leslie & Burwell, Cottage Grove	8 00

Best bull calf, over 6 and under 12 months.

No.			
	641	Leslie & Burwell, Cottage Grove	$8 00
	962	E. W. Richmond, Columbus	5 00

Best cow, 3 years and over ..

641	Leslie & Burwell, Cottage Grove	20 00
641	Leslie & Burwell, Cottage Grove	15 00
641	Leslie & Burwell, Cottage Grove	8 00

Best cow, 2 years and under 3.

641	Leslie & Burwell, Cottage Grove	15 00
962	E. W. Richmond, Columbus	10 00
962	E. W. Richmond, Columbus	5 00

Best heifer, 1 year and under 2.

641	Leslie & Burwell, Cottage Grove	10 00
641	Leslie & Burwell, Cottage Grove	8 00

Best heifer calf, over 6 and under 12 months.

641	Leslie & Burwell, Cottage Grove	8 00
962	E. W. Richmond, Columbus	5 00

Best bull and four of his get.

962	E. W. Richmond, Columbus	25 00

Best grade cow, 2 years and over, get of registered sire.

641	Leslie & Burwell, Cottage Grove	8 00

SWEEPSTAKES HERD.

Best herd of Galloways or Polled Angus, consisting of a bull, 2 years old and over, and four females, one cow 3 years old and over, heifer 2 and under 3 years, heifer 1 and under 2, heifer over 6 and under 12 months.

641	Leslie & Burwell, Cottage Grove	$50 00
962	E. W. Richmond, Columbus	25 00

SWEEPSTAKES.

Best cow, 2 years old and over.

641	Leslie & Burwell, Cottage Grove	$25 00

Best bull, 1 year old and over.

641	Leslie & Burwell, Cottage Grove	25 00

CLASS 21 — *Herefords.*

Best bull 3 years and over.

No. 119	Thos. Clark, Beecher, Ill.	$20 00
1227	J. J. Williams, Berlin, Wis.	15 00
112	Cosgrove Live Stock Co., Le Sueur, Minn.	8 00

Best bull 2 years and under 3.

1227	J. J. Williams, Berlin.	15 00
1227	J. J. Williams, Berlin.	10 00

Best bull 1 year and under 2.

112	Cosgrove Live Stock Co., Le Sueur, Minn.	10 00
1227	J. J. Williams, Berlin.	8 00

Best bull calf over 6 and under 12 months.

112	Cosgrove Live Stock Co., Le Sueur, Minn.	8 00
1127	J. J. Williams, Berlin	5 00

Best cow 3 years and over.

119	Thos. Clark, Beecher, Ill.	20 00
119	Thos. Clark, Beecher, Ill.	15 00
1227	J. J. Williams, Berlin	8 00

Best cow 2 years and under 3.

119	Thos. Clark, Beecher, Ill.	15 00
112	Cosgrove Live Stock Co., Le Sueur, Minn.	10 00
1227	J. J. Williams, Berlin	5 00

Best heifer 1 year and under 2.

119	Thos. Clark, Beecher, Ill.	8 00
112	Cosgrove Live Stock Co., Le Sueur, Minn.	5 00

Best heifer calf over 6 and under 12 months.

119	Thos. Clark, Beecher, Ill.	8 00
112	Cosgrove Live Stock Co., Le Sueur, Minn.	5 00

Best bull and 4 of his get.

119	Thos. Clark, Beecher, Ill.	25 00
112	Cosgrove Live Stock Co., Le Sueur, Minn.	15 00

SWEEPSTAKES HERD.

Best herd of Herefords consisting of a bull 2 years old and over, and four females, one cow 3 years and over, heifer 2 and under 3 years, heifer 1 year and under 2, heifer over 6 and under 12 months.

119	Thos. Clark, Beecher, Ill.	50 00
112	Cosgrove Live Stock Co., Le Sueur, Minn.	25 00

SWEEPSTAKES.

Best cow 2 years old and over.

No. 119 Thos. Clark, Beecher, Ill..... $25 00

Best bull 1 year old and over.

119 Thos. Clark, Beecher, Ill..... 25 00

CLASS 22 — *Red Polls or Polled Norfolks.*

Best bull, 3 years and over.

No. 739. J. W. Martin, Richland City..... 20 00

Best bull, 1 year and under 2.

1090 E. B. Thomas, Dodges Corners..... 10 00

Best bull calf, over 6 and under 12 months.

739 J. W. Martin, Richland City..... 8 00

Best cow, 3 years and over.

739 J. W. Martin, Richland City..... 20 00
739 J. W. Martin, Richland City..... 15 00

Best cow, 2 years and under 3.

739 J. W. Martin, Richland City..... 15 00

Best heifer, 1 year and under 2.

1090 E. B. Thomas, Dodges Corners..... 10 00
739 J. W. Martin, Richland City..... 8 00

Heifer calf, over 6 and under 12 months.

739 J. W. Martin, Richland City..... 8 00
739 J. W. Martin, Richland City..... 5 00

Best bull and four of his get.

739 J. W. Martin, Richland City..... 25 00

SWEEPSTAKES.

Best cow, 2 years old and over.

No. 739 J. W. Martin, Richland City..... $25 00

Best bull, 1 year old and over.

1090 E. B. Thomas, Dodge's Corners..... 25 00

CLASS 23.—*The Produce of Registered Short Horn, Galloways or Hereford Sires.*

Best steer, over 2 and under 3 years.

No. 119 Thos. Clark, Beecher, Ill..... $15 00
119 Thos. Clark, Beecher Ill..... 10 00

Best steer, over 1 and under 2 years.

409 Geo. Harding. Waukesha..... 15 00
119 Thos. Clark, Beecher, Ill..... 10 00

CLASS 24.

Best bunch of steers, not less than 4 nor more than 8 years, the produce of registered sires, of any breed.

No. 119 Thos. Clark, Beecher, Ill..... $30 00

DEPARTMENT C.— SHEEP.

CLASS 25.— *American Merino.*

Best ram 2 years old and over.

No. 881	J. H. Pitcher, Eagle	$10 00
737	R. H. Mill, Palmyra	8 00

Best ram, 1 year and under 2.

881	J. H. Pitcher, Eagle	10 00
737	R. H. Mill, Palmyra	7 00

Best ram lamb.

481	D. B. Jones, Weiner	10 00
737	R. H. Mill, Palmyra	7 00

Best ewe, 2 years and over.

737	R. H. Mill, Palmyra	10 00
881	J. H. Pitcher, Eagle	8 00

Best ewe, 1 year and under 2.

881	J. H. Pitcher, Eagle	10 00
481	D. B. Jones, Weiner	7 00

Best ewe lamb.

737	R. H. Mill, Palmyra	10 00
481	D. B. Jones, Weiner	7 00

Best ram and three ewes any age. (Ewes not included in the above.)

881	J. H. Pitcher, Eagle	10 00

CLASS 26.— *Oxford Downs.*

Best ram 2 years and over.

No. 1054	Stone & Harris, Stonington, Ill.	$10 00
1054	Stone & Harris, Stonington	8 00

Best ram 1 year and under 2.

1054	Stone & Harris, Stonington	10 00
1054	Stone & Harris, Stonington	7 00

The flower of the flock.

Best ram lamb.

No. 1054	Stone & Harris, Stonington	$10 00
735	Geo. McKerrow, Sussex	7 00

Best ewe 2 years and over.

1054	Stone & Harris, Stonington	10 00
735	Geo. McKerrow, Sussex	8 00

Best ewe 1 year and under 2.

1054	Stone & Harris, Stonington	10 00
735	Geo. McKerrow, Sussex	7 00

Best ewe lamb.

1054	Stone & Harris, Stonington	10 00
735	Geo. McKerrow, Sussex	7 00

Best ram and three ewes any age. (Ewes not included in the above.)

1054	Stone & Harris, Stonington	10 00

CLASS 27—*Cotswolds.*

Best ram 2 years and over.

No. 409	Geo. Harding, Waukesha	$10 00
123	Geo. F. Davis & Co., Dyer, Ind	8 00

Best ram 1 year and under 2.

409	Geo. Harding, Waukesha	10 00
751	John Milton, Marshall, Mich	7 00

Best ram lamb.

409	Geo. Harding, Waukesha	10 00
409	Geo. Harding, Waukesha	7 00

Best ewe 2 years and over.

409	Geo. Harding, Waukesha	10 00
409	Geo. Harding, Waukesha	8 00

Best ewe 1 year and under 2.

409	Geo. Harding, Waukesha	10 00
409	Geo. Harding, Waukesha	7 00

Best ewe lamb.

No. 409	Geo. Harding, Waukesha	$10	00
409	Geo. Harding, Waukesha	7	00

Best ram and three ewes, any age. (Ewes not included in the above.)

409	Geo. Harding, Waukesha	10	00

CLASS 2S — *South Downs.*

Best ram, 2 years and over.

735	Geo. McKerrow, Sussex	$10	00
735	Geo. McKerrow, Sussex	8	00

Best ram, 1 year and under 2.

751	John Milton, Marshall, Mich	10	00
412	Chas. F. Hill, Brookfield	7	00

Best ram lamb.

735	Geo. McKerrow, Sussex	10	00
735	Geo. McKerrow, Sussex	7	00

Best ewe, 2 years and over.

735	Geo. McKerrow, Sussex	10	00
735	Geo. McKerrow, Sussex	8	00

Best ewe, 1 year and under 2.

735	Geo. McKerrow, Sussex	10	00
735	Geo. McKerrow, Sussex	7	00

Best ewe lamb.

735	Geo. McKerrow, Sussex	10	00
735	Geo. McKerrow, Sussex	7	00

Best ram and three ewes any age. (Ewes not included in the above.)

735	Geo. McKerrow, Sussex	10	00

CLASS 29—*Shropshires.*

Best ram 2 years and over.

No.			
	751	John Milton, Marshall, Mich	$10 00
	735	George McKerrow, Sussex	8 00

Best ram 1 year and under 2.

751	John Milton, Marshall, Mich	10 00
751	John Milton, Marshall, Mich	7 00

Best ram lamb.

735	Geo. McKerrow, Sussex	10 00
751	John Milton, Marshall, Mich	7 00

Best ewe 2 years and over.

735	Geo. McKerrow, Sussex	10 00

Best ewe 1 year and under 2.

751	John Milton, Marshall, Mich	10 00
751	John Milton, Marshall, Mich	7 00

Best ewe lamb.

751	John Milton, Marshall, Mich	10 00
735	Geo. McKerrow, Sussex	7 00

Best ram and 3 ewes any age. (Ewes not included in the above.)

751	John Milton, Marshall, Mich	10 00

CLASS 30—*Hampshire Downs.*

Best ram 2 years old and over.

No.			
	751	John Milton, Marshall, Mich	$10 00
	110	J. M. Cory, Yates City, Ill	8 00

Best ram 1 year and under 2.

110	J. M. Cory, Yates City, Ill	10 00
110	J. M. Cory, Yates City, Ill	7 00

Best ram lamb.

751	John Milton, Marshall, Mich	10 00
110	John Cory, Yates City, Ill	7 00

Best ewe 2 years and over.

No.	110	J. M. Cory, Yates City, Ill.....	$10 00
	110	J. M. Cory, Yates City, Ill.....	8 00

Best ewe 1 year and under 2.

	751	John Milton, Marshall, Mich.....	10 00
	110	J. M. Cory, Yates City, Ill.....	7 00

Best ewe lamb.

	751	John Milton, Marshall, Mich.....	10 00
	751	John Milton, Marshall, Mich.....	7 00

CLASS 31.— *Horned Dorsets.*

Best ram 2 years and over.

No.	430	T. L. Hacker, Cottage Grove	$10 00

Best ewe 2 years and over.

	430	T. L. Hacker, Cottage Grove.....	10 00

Best ewe 1 year and under 2.

	430	T. L. Hacker, Cottage Grove.....	10 00

Best ewe lamb.

	430	T. L. Hacker, Cottage Grove.....	10 00

Best ram and three ewes any age. (Ewes not included in the above.)

	430	T. L. Hacker, Cottage Grove.....	10 00

Best pen three fat wethers any breed.

	751	John Milton, Marshall, Mich...	10 00

DEPARTMENT D—SWINE.

CLASS 32.—*Poland China.*

Best boar, 2 years old and over.

No. 1205	J. F. Wegge, Burlington	$15 00
645	Geo. A. Lytle, Elkhorn	7 00

Best boar, 1 year and under 2.

722	H. N. Maxham, Diamond Lake, Ill	10 00
650	J. C. Love & Son, Waukesha	5 00

Best breeding sow, 2 years old and over.

907	G. W. Plank, Eyota, Minn	15 00
645	Geo. A. Lytle, Elkhorn	7 00

Best breeding sow, 1 year and under 2.

722	H. N. Maxham, Diamond Lake, Ill	22 00
907	G. W. Plank, Eyota, Minn	8 00

Best breeding sow with litter of sucking pigs, not less than four in number, and not over 6 months old.

907	G. W. Plank, Eyota, Minn	15 00
645	Geo. A. Lytle, Elkhorn	7 00

Best boar pig, over 6 months and under 1 year.

650	J. C. Love & Son, Waukesha	8 00
1213	J. E. Welch, Waukesha	4 00

Best sow pig, over 6 months and under 1 year.

907	G. W. Plank, Eyota, Minn	8 00
1213	J. E. Welch, Waukesha	4 00

Best boar pig, under 6 months.

722	H. N. Maxham, Diamond Lake, Ill	6 00
650	J. C. Love & Son, Waukesha	3 00

Best sow pig, under 6 months.

722	H. N. Maxham, Diamond Lake, Ill	6 00
650	J. C. Love & Son, Waukesha	3 00

HERD SWEEPSTAKES.

Best boar, any age.

722 H. N. Maxham, Diamond Lake, Ill.... ... . 12 00

Best sow, any age.

907 G. W. Plank, Eyota, Minn..... ..... 12 00

Best boar and four of his get, the latter to be under 1 year old and bred and owned by the exhibitor. Competition confined to Wisconsin herds.

1213 J. E. Welch, Waukesha..... 15 00

CLASS 33 — *Chester White and Jersey Reds.*

Best boar, 2 years old and over.

No. 886 Palmer & Noblet, Springfield..... $15 00
63 J. B. Barker & Son, Millard... ... . 7 00

Best boar 1 year and under 2.

63 J. B. Barker & Son, Millard..... ..... 10 00
886 Palmer & Noblet, Springfield..... ..... 5 00

Best breeding sow 2 years and over.

63 J. B. Barker & Son, Millard..... 15 00
886 Palmer & Noblet, Springfield..... 7 00

Best breeding sow 1 year and under 2.

886 Palmer & Noblet, Springfield..... 12 00
63 J. B. Barker & Son, Millard 8 00

Best breeding sow with litter of sucking pigs, not less than four in number and not over six months old.

886 Palmer & Noblet, Springfield..... ..... 15 00
63 J. B. Barker & Son, Millard 7 00

Best boar pig over 6 months and under 1 year.

63 J. B. Barker & Son, Millard..... 8 00
886 Palmer & Noblet, Springfield 4 00

Best sow pig over 6 months and under 1 year.

856 Palmer & Noblet, Springfield..... 8 00
63 J. B. Barker & Son, Millard 4 00

Best boar pig under 6 months.

No.	886	Palmer & Noblet, Springfield	$6 00
	63	J. B. Barker & Son, Millard	3 00

Best sow pig under 6 months.

886	Palmer & Noblet, Springfield	6 00
63	J. B. Barker & Son, Millard	3 00

HERD SWEEPSTAKES.

Best boar any age.

63	J. B. Barker & Son, Millard	12 00

Best sow any age.

63	J. B. Barker & Son, Millard	12 00

Best boar and four of his get, the latter to be under 1 year old and bred and owned by the exhibitor. Competition confined to Wisconsin herds.

886	Palmer & Noblet, Springfield	15 00

CLASS 34.—*Berkshire.*

Best boar, 2 years old and over.

No.	108	B. N. Cooley, Coldwater, Mich	$15 00
	108	B. N. Cooley, Coldwater, Mich	7 00

Best boar, 1 year and under 2.

108	B. N. Cooley, Coldwater, Mich	15 00

Best breeding sow, 2 years and over.

108	B. N. Cooley, Coldwater, Mich	15 00

Best breeding sow, 1 year and under 2.

108	B. N. Cooley, Coldwater, Mich	12 00
108	B. N. Cooley, Coldwater, Mich	8 00

Best breeding sow with litter of sucking pigs, not less than four in number, and not over 6 months old.

No.	108	B. N. Cooley, Coldwater, Mich	15 00

Best boar, over 6 months and under 1 year.

No.	108	B. N. Cooley, Coldwater, Mich	$8 00

Best sow pig, over 6 months and under 1 year.

108	B. N. Cooley, Coldwater, Mich	8 00
108	B. N. Cooley, Coldwater, Mich	4 00

Best boar pig, under 6 months.

108	B. N. Cooley, Coldwater, Mich	6 00
108	B. N. Cooley, Coldwater, Mich	3 00

Best sow pig, under 6 months.

108	B. N. Cooley, Coldwater, Mich	6 00
108	B. N. Cooley, Coldwater, Mich	3 00

HERD SWEEPSTAKES.

Best boar, any age.

108	B. N. Cooley, Coldwater, Mich	12 00

Best sow, any age.

108	B. N. Cooley, Coldwater, Mich	12 00

CLASS 35—*Essex, Small Yorkshire and Cheshire.*

Best boar 2 years old and over.

No.	1201	M. H. Walworth, Hillsdale, Mich	$15 00

Best boar, 1 year old and under.

735	George McKerrow, Sussex	10 00
1201	M. H. Walworth, Hillsdale, Mich	15 00

Best breeding sow 2 years and over.

735	Geo. McKerrow, Sussex	15 00
1201	M. H. Walworth, Hillsdale, Mich	7 00

Best breeding sow one year old and under six.

732	Geo. McKerrow, Sussex	12 00
1201	M. H. Walworth, Hillsdale, Mich	8 00

Best breeding sow with litter of sucking pigs, not less than four in number, and not over 6 months old.

No. 1201	M. H. Walworth, Hillsdale, Mich	$15 00
735	Geo. McKerrow, Sussex	7 00

Best sow pig, over 6 months and under 1 year.

1201	M. H. Walworth, Hillsdale, Mich	8 00

Best boar pig, under 6 months.

735	Geo. McKerrow, Sussex	6 00
1201	M. H. Walworth, Hillsdale, Mich	3 00

Best sow pig, under 6 months.

735	Geo. McKerrow, Sussex	6 00
735	Geo. McKerrow, Sussex	6 00

HERD SWEEPSTAKES.

Best boar, any age.

735	Geo. McKerrow, Sussex	12 00

Best sow, any age.

735	Geo. McKerrow, Sussex	12 00

Best boar and four of his get, the latter to be under 1 year old, bred and owned by the exhibitor. Competition to be confined to Wisconsin herds.

735	M. H. Walworth, Hillsdale, Mich	15 00

CLASS 36.— *Victorias.*

Best boar, 2 years old and over.

1201	M. H. Walworth, Hillsdale, Mich	15 00
43	A. J. Benedict, Walworth	7 00

Best boar, 1 year and under 2.

43	A. J. Benedict, Walworth	10 00
61	J. R. Brabazon, Delavan	5 00

Best breeding sow, 2 years and over.

43	A. J. Benedict, Walworth	15 00
1201	M. H. Walworth, Hillsdale, Mich	7 00

Best breeding sow, 1 year and under 2.

43	A. J. Benedict, Walworth	12 00
412	Chas. F. Hill, Brookfield	8 00

Best breeding sow with litter of sucking pigs, not less than four in number and not over six months old.

No.			
	61	J. R. Brabazon, Delavan	$7 00
	43	A. J. Benedict, Walworth	7 00

Best boar, over 6 months and under 1 year.

61	J. R. Brabazon, Delavan	8 00
43	A. J. Benedict, Walworth	4 00

Best sow pig, over 6 months and under 1 year.

61	J. R. Brabazon, Delavan	8 00
1201	M. H. Walworth, Hillscale, Mich	4 00

Best boar pig, under 6 months.

61	J. R. Brabazon, Delavan	6 00
1201	M. H. Walworth, Hillsdale, Mich	3 00

Best sow pig, under 6 months.

61	J. R. Brabazon, Delavan	6 00
43	A. J. Benedict, Walworth	3 00

HERD SWEEPSTAKES.

Best boar, any age.

1201	M. H. Walworth, Hillsdale, Mich	12 00

Best sow, any age.

43	A. J. Benedict, Walworth	12 00

Best boar and four of his get, the get to be under 1 year old, and bred and owned by the exhibitor. Competition to be confined to Wisconsin herds.

43	A. J. Benedict, Walworth	15 00

DEPARTMENT E—POULTRY.

CLASS 37.—*Asiatics.*

Best pair Light Brahma fowls.

No. 1237	R. D. Warner, Whitewater	$3 00
971	E. G. Roberts, Fort Atkinson	2 00

Best pair Light Brahma chicks.

50	P. A. Bartlett, Jacksonville, Ill	3 00
50	P. A. Bartlett, Jacksonville, Ill	2 00

Best pair Dark Brahma fowls.

651	Love Bros., Waukesha	3 00
50	P. A. Bartlett, Jacksonville, Ill	2 00

Best pair Dark Brahma chicks.

61	J. R. Brabazon, Delavan	3 00
50	P. A. Bartlett, Jacksonville, Ill	2 00

Best pair Buff Cochin fowls.

50	P. A. Bartlett, Jacksonville, Ill	3 00
651	Love Bros., Waukesha	2 00

Best pair Buff Cochin chicks.

50	P. A. Bartlett, Jacksonville, Ill	3 00
61	J. R. Brabazon, Delavan	2 00

Best pair Partridge Cochin fowls.

50	P. A. Bartlett, Jacksonville, Ill	3 00
651	Love Bros., Waukesha	2 00

Best pair Partridge Cochin chicks.

50	P. A. Bartlett, Jacksonville, Ill	3 00
61	J. R. Brabazon, Delavan	2 00

Best pair White Cochin fowls.

1237	R. D. Warner, Whitewater	3 00
61	J. R. Brabazon, Delavan	2 00

Best pair White Cochin chicks.

No.	971	E. G. Roberts, Fort Atkinson	$3 00
	61	J. R. Brabazon, Delavan	2 00

Best pair Black Cochin fowls.

50	P. A. Bartlett, Jacksonville, Ill	3 00

Best pair Black Cochin chicks.

50	P. A. Bartlett, Jacksonville, Ill	3 00
651	Love Bros., Waukesha	2 00

Best pair Langshan fowls.

971	E. G. Roberts, Fort Atkinson	3 00
50	P. A. Bartlett, Jacksonville, Ill	2 00

Best pair Langshan chicks.

61	J. R. Brabazon, Delavan	3 00
125	Peter DeGelke, Milwaukee	2 00

Best pair American Dominique fowls.

61	J. R. Brabazon, Delavan	3 00
50	P. A. Bartlett, Jacksonville, Ill	2 00

Best pair American Dominique chicks.

50	P. A. Bartlett, Jacksonville, Ill	3 00
61	J. R. Brabazon, Delavan	2 00

Best pair Plymouth Rock fowls.

1287	Yorgey & Rich, Horicon	3 00
971	E. G. Roberts, Fort Atkinson	2 00

Best pair Plymouth Rock chicks.

651	Love Bros., Waukesha	3 00
61	J. R. Brabazon, Delavan	2 00

Best pair white Plymouth Rock fowls.

651	Love Bros., Waukesha	3 00
1237	R. D. Warner, Whitewater	2 00

Best pair white Plymouth Rock chicks.

886	Palmer & Noblet, Springfield	3 00
651	Love Bros., Waukesha	2 00

Best pair Wyandotte fowls.

61	J. R. Brabazon, Delavan	3 00
971	E. G. Roberts, Fort Atkinson	2 00

Best pair Wyandotte chicks.

No. 1237	R. D. Warner, Whitewater	$3 00
61	J. R. Brabazon, Delavan	2 00

Best pair white Wyandotte fowls.

61	J. R. Brabazon, Delavan	3 00
50	P. A. Bartlett, Jacksonville, Ill	2 00

Best pair White Wyandotte chicks.

971	E. G. Roberts, Fort Atkinson	3 00
50	P. A. Bartlett, Jacksonville, Ill	2 00

Best pair Colored Dorking fowls.

1237	R. D. Warner, Whitewater	3 00

Best pair Colored Dorking chicks.

1237	R. D. Warner, Whitewater	3 00

Best pair Houdan fowls.

971	E. G. Roberts, Fort Atkinson	3 00
1281	Yorgey & Rich, Horicon	2 00

Best pair Houdan chicks.

1281	Yorgey & Rich, Horicon	3 00
1281	Yorgey & Rich, Horicon	2 00

Best pair Black Polish (white crested) fowls.

61	J. R. Brabazon, Delavan	3 00
971	E. G. Roberts, Fort Atkinson	2 00

Best pair Black Polish chicks.

1237	R. D. Warner, Whitewater	3 00
61	J. R. Brabazon, Delavan	2 00

Best pair White Polish fowls.

1237	R. D. Warner, Whitewater	3 00
61	J. R. Brabazon, Delavan	2 00

Best pair White Polish chicks.

971	E. G. Roberts, Fort Atkinson	3 00

Best pair Silver Polish fowls.

1237	R. D. Warner, Whitewater	3 00
61	J. R. Brabazon, Delavan	2 00

Best pair Silver Polish chicks.

No. 61	J. R. Brabazon, Delavan	$3 00
1237	R. D. Warner, Whitewater	2 00

Best pair Golden Polish fowls.

61	J. R. Brabazon, Delavan	3 00

Best pair Golden Polish chicks.

61	J. R. Brabazon, Delavan	3 00
1237	R. D. Warner, Whitewater	2 00

Best pair Brown Red fowls.

50	P. A. Bartlett, Jacksonville, Ill	3 00
971	E. G. Roberts, Fort Atkinson	2 00

Best pair Brown Red chicks.

971	E. G. Roberts, Fort Atkinson	3 00
50	P. A. Bartlett, Jacksonville, Ill	2 00

Best pair black breasted Red Game fowls.

50	P. A. Bartlett, Jacksonville, Ill	3 00
971	E. G. Roberts, Fort Atkinson	2 00

Best pair black breasted Red Game chicks.

50	P. A. Bartlett, Jacksonville, Ill	3 00
61	J. R. Brabazon, Delavan	2 00

Best pair Pyle chicks.

61	J. R. Brabazon, Delavan	3 00
651	Love Bros., Waukesha	2 00

Best pair Game any other variety fowls.

971	E. G. Roberts, Fort Atkinson	3 00
1237	R. D. Warner, Whitewater	2 00

Best pair Game any other variety chicks.

971	E. G. Roberts, Fort Atkinson	3 00
971	E. G. Roberts, Fort Atkinson	2 00

Best pair Black Hamburg fowls.

971	E. G. Roberts, Fort Atkinson	3 00
50	P. A. Bartlett, Jacksonville, Ill	2 00

Best pair Black Hamburg chicks.

971	E. G. Roberts, Fort Atkinson	3 00
1237	R. D. Warner, Whitewater	2 00

Best pair Silver Spangled Hamburg fowls.

No. 971	E. G. Roberts, Fort Atkinson	$3 00
50	P. A. Bartlett, Jacksonville, Ill	2 00

Best pair Silver Spangled Hamburg chicks.

1281	Yorgey & Rich, Horicon	3 00
1281	Yorgey & Rich, Horicon	2 00

Best pair Golden Spangled Hamburg fowls.

50	P. A. Bartlett, Jacksonville, Ill	3 00

Best pair Black Spanish (white face) fowls.

971	E. G. Roberts, Fort Atkinson	3 00
971	E. G. Roberts, Fort Atkinson	2 00

Best pair Black Spanish chicks.

651	Love Bros., Waukesha	3 00
651	Love Bros., Waukesha	2 00

Best pair White Leghorn fowls.

1237	R. D. Warner, Whitewater	3 00
125	Peter De Gelke, Milwaukee	2 00

Best pair White Leghorn chicks.

1237	R. D. Warner, Whitewater	3 00
99	W. S. Cook, Waukesha	2 00

Best pair Brown Leghorn fowls.

50	P. A. Bartlett, Jacksonville, Ill	3 00
971	E. G. Roberts, Fort Atkinson	2 00

Best pair Brown Leghorn chicks.

971	E. G. Roberts, Fort Atkinson	3 00
1237	R. D. Warner, Whitewater	2 00

Best pair Golden Seabright fowls.

50	P. A. Bartlett, Jacksonville, Ill	3 00
971	E. G. Roberts, Fort Atkinson	2 00

Best pair Golden Seabright chicks.

50	P. A. Bartlett, Jacksonville, Ill	3 00
1237	R. D. Warner, Whitewater	2 00

Best pair Silver Duckwing Game fowls.

1237	R. D. Warner, Whitewater	3 00
971	E. G. Roberts, Fort Atkinson	2 00

Best pair Silver Duckwing Game chicks.

No.			
No.	50	P. A. Bartlett, Jacksonville, Ill	$3 00

Best pair black breasted Red Game fowls.

	971	E. G. Roberts, Fort Atkinson	3 00
	651	Love Bros., Waukesha	2 00

Best pair black breasted Red Game chicks.

	1237	R. Warner, Whitewater	3 00
	123	Geo. F. Davis & Co., Dyer, Ind	2 00

Best pair Silver Seabright fowls.

	50	P. A. Bartlett, Jacksonville, Ill	3 00

Best pair Silver Seabright chicks.

	50	P. A. Bartlett, Jacksonville, Ill	3 00

Best pair Black Rose Comb fowls.

	50	P. A. Bartlett, Jacksonville, Ill	3 00
	50	P. A. Bartlett, Jacksonville, Ill	2 00

Best pair Black Rose Comb chicks.

	50	P. A. Bartlett, Jacksonville, Ill	3 00

Best pair Japanese fowls.

	61	J. R. Brabazon, Delavan	3 00

Best pair Bronze Turkey fowls.

	50	P. A. Bartlett, Jacksonville, Ill	3 00
	61	J. R. Brabazon, Delavan	2 00

Best pair Bronze Turkey chicks.

	50	P. A. Bartlett, Jacksonville, Ill	3 00
	61	J. R. Brabazon, Delavan	2 00

Best pair White Holland Turkey fowls.

	971	E. G. Roberts, Fort Atkinson	3 00
	50	P. A. Bartlett, Jacksonville, Ill	

Best pair White Holland Turkey chicks.

	50	P. A. Bartlett, Jackson, Ill	3 00
	61	J. R. Brabazon, Delavan	2 00

Best pair Wild Turkey fowls.

	971	E. G. Roberts, Fort Atkinson	3 00
	61	J. R. Brabazon, Delavan	2 00

Best pair Wild Turkey chicks.

No. 1237	R. D. Warner, Whitewater	$3 00
61	J. R. Brabazon, Delavan	2 00

Best pair Toulose geese.

61	J. R. Brabazon, Delavan	3 00
1237	R. D. Warner, Whitewater	2 00

Best pair Embeden geese.

50	P. A. Bartlett, Jacksonville, Ill	3 00
1237	R. D. Warner, Whitewater	2 00

Best pair White China geese.

61	J. R. Brabazon, Delavan	3 00
50	P. A. Bartlett, Jacksonville, Ill	2 00

Best pair Pekin ducks.

123	Geo. F. Davis & Co., Dyer, Ind	3 00
971	E. G. Roberts, Fort Atkinson	2 00

Best pair Aylesbury ducks.

61	J. R. Brabazon, Delavan	3 00
651	Love Bros., Waukesha	2 00

Best pair Rouen ducks.

50	P. A. Bartlett, Jacksonville, Ill	3 00
971	E. G. Roberts, Fort Atkinson	2 00

Best pair Muscovy ducks.

1237	R. D. Warner, Whitewater	3 00
50	P. A. Bartlett, Jacksonville, Ill	2 00

Best pair Cayuga ducks.

1237	R. D. Warner, Whitewater	3 00
971	E. G. Roberts, Fort Atkinson	2 00

Best pair Pea fowls.

61	J. R. Brabazon, Delavan	3 00

DEPARTMENT F — AGRICULTURE.

CLASS 38 — *Field Products.*

Best sample spring wheat (Rio Grand or China Tea).

No.	329	A. L. Greengo, Colgate	$5 00
	325	J. W. Ganes, Lowell	3 00

Best sample spring wheat (Fife).

902	D. T. Pilgrim, Wauwatosa	5 00
329	A. L. Greengo, Colgate	3 00

Best sample blue stem spring wheat.

329	A. L. Greengo, Colgate	5 00
1224	H. P. West, Fayetteville	3 00

Best any other spring variety.

329	A. L. Greengo, Colgate	5 00
10	C. E. Angell, Oshkosh	3 00

Best white winter wheat.

415	Wm. Harland, Duplainsville	5 00
902	D. T. Pilgrim, Wauwatosa	3 00

Best red winter wheat.

1288	J. C. Zimmerman, Butler	5 00
10	C. E. Angell, Oshkosh	3 00

Best rye.

329	A. L. Greengo, Colgate	5 00
648	J. C. Loomis, Alma Center	3 00

Best oats.

127	Thos. Davis, Oshkosh	5 00
1088	Frank Turrall, Bay View	300

Best white Schomen oats.

10	C. E. Angell, Oshkosh	5 00
415	Wm. Harland, Duplainsville	3 00

Best barley.

No.			
No.	902	D. T. Pilgrim, Wauwatosa	$5 00
	10	C. E. Angell, Oshkosh	3 00

Best buckwheat.

	5	J. W. Adamson, Sussex	5 00
	10	C. E. Angell, Oshkosh	3 00

Best flax seed.

	10	C. E. Angell, Oshkosh	5 00
	127	Thos. Davis, Oshkosh	3 00

Best timothy seed.

	1288	J. C. Zimmerman, Butler	5 00
	1224	H. P. West, Fayetteville	3 00

Best clover seed.

	1090	E. B. Thomas, Dodges Corners	5 00
	5	J. W. Adamson, Sussex	3 00

Best variety of red top.

	10	C. E. Angell, Oshkosh	3 00

Best Hungarian millet.

	10	C. E. Angell, Oshkosh	3 00

Best of any other variety.

	10	C. E. Angell, Oshkosh	3 00

Best field peas.

	829	A. L. Greongo, Colgate	3 00

Best peas of any other variety.

	1224	H. P. West, Fayetteville	3 00
	415	Wm. Harland, Duplainsville	2 00

Best navy beans.

	648	J. C. Loomis, Alma Center	5 00
	829	A. L. Grenego, Colgate	3 00

Best beans of any other variety.

	10	C. E. Angell, Oshkosh	5 00
	127	Thos. Davis, Oshkosh	3 00

Best dent corn, white.

No. 127	Thos. Davis, Oshkosh	$5 00
1224	H. P. West, Fayetteville	3 00

Best dent corn, yellow.

1224	H. P. West, Fayetteville	5 00
1203	E. G. Ward, Caldwell	3 00

Best flint corn, white.

1082	W. W. Thompson, Bay View	5 00
1221	N. Washburn, Cameron	3 00

Best flint corn, yellow.

5	J. W. Adamson, Sussex	5 00
329	A. L. Greengo, Colgate	3 00

Best Dutton corn.

1224	H. P. West. Fayetteville	5 00
648	J. C. Loomis, Alma Center	3 00

Best bushel corn in the ear, any variety.

5	J. W. Adamson, Sussex	5 00
1224	H. P. West, Fayetteville	3 00

Best quality and display of tobacco leaf.

1203	E. G. Ward, Caldwell	5 00
1082	W. W. Thompson, Bay View	3 00

Best six pumpkins.

1082	W. W. Thompson, Bay View	3 00
1203	E. G. Ward, Caldwell	2 00

Best display of grains on straw or stalk.

10	C. E. Angell, Oshkosh	5 00
1088	Frank Turrell, Bay View	3 00

Best exhibition of field products grown in the state, including not less than twelve varieties in all, each sample to be free to compete for the foregoing individual prizes, both quality and number considered, and being not less in quantity than as above specified.

1224	H. P. West, Fayetteville	20 00
10	C. E. Angell, Oshkosh	10 00

CLASS 39 — *Garden and Vegetable Produce.*

Best Early Rose or Ohio potatoes.

No. 648	J. C. Loomis, Alma Center	$3 00
1221	N. Washburn, Cameron	2 00

Best Beauty of Hebron.

1221	N. Washburn, Cameron	3 00
1282	C. A. Youmans, Neillsville	2 00

Best any other variety of early potatoes.

648	J. C. Loomis, Alma Center	3 00
1224	H. P. West, Fayetteville	2 00

Best Snowflake potatoes.

648	J. C. Loomis, Alma Center	3 00
1082	W. W. Thompson, Bay View	2 00

Best Burbank seedling potatoes.

1219	C. Wynoble, St. Francis	3 00
1082	W. W. Thompson, Bay View	2 00

Best any other variety of late potatoes.

648	J. C. Loomis, Alma Center	3 00
1082	W. W. Thompson, Bay View	2 00

Best and largest variety of potatoes.

1082	W. W. Thompson, Bay View	$5 00
1221	N. Washburn, Cameron	2 00

Best Yellow Nansemond sweet potatoes.

1082	W. W. Thompson, Bay View	3 00
1219	C. Wynoble, St. Francis	2 00

Best red Bermuda sweet potates.

1082	W. W. Thompson, Bay View	3 00

Best four quarts Lima beans, shelled.

1224	H. P. West, Fayetteville	3 00
1203	E. G. Ward, Caldwell	2 00

Best Turnip beets.

415	Wm. Harland, Duplainsville	3 00
1082	W. W. Thompson, Bay View	2 00

Best Long Blood beets.

No. 1219	C. Wynoble, St. Francis	$3 00
1203	E. G. Ward, Caldwell	2 00

Best Mangel Wurtzel.

1082	W. W. Thompson, Bay View	3 00
1088	Frank Turrell, Bay View	2 00

Best Red Wethersfield onions.

1082	W. W. Thompson, Bay View	3 00
1219	C. Wynoble, St. Francis	2 00

Best Yellow Danvers.

1082	W. W. Thompson, Bay View	3 00
1218	Ett Wynoble, St. Francis	2 00

Best White variety of onions.

1219	C. Wynoble, St. Francis	3 00
1082	W. W. Thompson, Bay View	2 00

Best Drum Head cabbage.

1072	B. Stueble, Milwaukee	3 00
1219	C. Wynoble, St. Francis	2 00

Best three cabbages in any other variety.

1282	C. A. Youmans, Neillsville	3 00
1072	B. Stueble, Millwaukee	2 00

Best Long Orange carrots.

1219	C. Wynoble, St. Francis	3 00
1082	W. W. Thompson, Bay view	2 00

Best Horn carrots.

1082	W. W. Thompson, Bay View	3 00
1203	E. G. Ward, Caldwell	2 00

Best head cauliflowers.

1072	B. Stueble, Milwaukee	3 00
1082	W. W. Thomson, Bay View	2 00

Best ten heads celery.

10	C. E. Angell, Oshkosh	3 00
1082	W. W. Thompson, Bay View	2 00

Best twelve ears early sweet corn.

No. 1203	E. G. Ward, Caldwell	$3 00
1090	E. B. Thomas, Dodge's Corners	2 00

Best twelve ears late sweet corn.

1082	W. W. Thompson, Bay View	3 00
1087	F. B. Tindall, Waterford	2 00

Best six egg plants.

1203	E. G. Ward, Caldwell	2 00
1087	F. B. Tindall, Waterford	1 00

Best six water melons.

1082	W. W. Thompson, Bay View	3 00
1203	E. G. Ward, Caldwell	2 00

Best six nutmeg melons.

1087	F. B. Tindall, Waterford	3 00
1203	E. G. Ward, Caldwell	2 00

Best parsnips.

1082	W. W. Thompson, Bay View	3 00
1219	C. Wynoble, St. Francis	2 00

Best twelve large red peppers.

1082	W. W. Thompson, Bay View	2 00
10	C. E. Angell, Oshkosh	1 00

Best twelve large yellow peppers.

1082	W. W. Thompson, Bay View	2 00

Best peck vegetable oysters.

1219	C. Wynoble, St. Francis	2 00
1082	W. W. Thompson, Bay View	1 00

Best six Hubbard squashes.

1082	W. W. Thompson, Bay View	3 00
1088	Frank Turrell, Bay View	2 00

Largest squash of any variety.

1082	W. W. Thompson, Bay View	3 00
1219	C. Wynoble, St. Francis	2 00

Best twelve tomatoes.

1087	F. B. Tindall, Waterford	3 00
1203	E. G. Ward, Caldwell	2 00

Best flat turnips.

No. 1082	W. W. Thompson, Bay View	$3 00
253	A. J. Frazer, Vernon	2 00

Best rutabagas.

1288	J. C. Zimmerman, Butler	3 00
1203	E. G. Ward, Caldwell	2 00

Best exhibition by professionals, including not less than five specimens of vegetables, nor less than twelve varieties in all, both quality and number of varieties to be considered.

1082	W. W. Thompson, Bay View	5 00
1219	C. Wynoble, St. Francis	3 00

Best exhibition by non-professionals, including not less than five specimens of vegetables, nor less than twelve varieties in all, both quality and numbers of varieties to be considered.

1203	E. G. Ward, Caldwell	5 00
1282	C. A. Youmans, Neillsville	3 00

CLASS 40 — *Products of the Flouring Mill, Dairy and Apairy.*

FACTORY CHEESE.

For each exhibit of three cheese, or not less than 150 pounds, made at any time, and awarded 40 points and over in a scale of 50 points or perfection, shall be designated "Grade No. 1," and draw a pro rate share of $100.

1085	J. M. Thomas, Dixon	7 00
246	John Frick, Plymouth	7 00
124	H. D. Deland, Sheboygan Falls	7 00
58	H. J. Bucheu, Cascade	7 00
163	E. L. Eastman, Saukville	7 00
896	Jos. Pfiefer, Franklin	7 00
1060	E. Snyder, Howards Grove	7 00
810	H. J. Noyes, Richland City	7 00
120	Geo. Chandler, Bear Valley	7 00
2	P. Ammon, Berlin	7 00
642	G. Lammers, Cedar Grove	7 00

FACTORY CHEESE — CHEEDER SHAPE.

Best three boxes of cheese made at any time, not less than 150 pounds.

120	Geo. Chandler, Bear Valley	30 00
59	Chas. Bahr, Branch	15 00
1085	J. M. Thomas, Dixon	7 00

FACTORY CHEESE — FLATS.

Best four boxes of cheese made at any time, of not less than 120 pounds.

YOUNG AMERICA CHEESE.

Best three boxes of not less than four in a box, made at any time.

No. 424	A. J. Hay, Raymond	$30	00
124	H. D. Deland, Sheboygan Falls	15	00
246	John Frick, Plymouth	7	00

SCHWEIZER CHEESE.

For best four Schweizer cheese, of not less than 150 pounds, made at any time.

570	F. H. Kielsmier, Hika	$20	00
265	A. F. Fasse, Johnsonville	15	00
1060	E. Snyder, Howard's Grove	7	00

CREAMERY BUTTER — FROM GATHERED CREAM.

For best three tubs of butter, of not less than 60 pounds each, made at any time.

1210	Robert Wittka, Beaver Dam	$30	00
134	W. P. Dennett, Reedsburg	15	00
54	Barre Mills Creamery Co., Barre Mills	7	00

CREAMERY BUTTER — FROM WHOLE MILK.

For best three tubs of butter of not less than 60 pounds each, made at any time.

428	A. R. Hoard, Fort Atkinson	$30	00
81	H. C. Christian, Johnson's Creek	15	00
81	H. C. Christian, Johnson's Creek	7	00

DAIRY BUTTER.

For the best package of dairy butter made at any time. In this class butter may be in eight pound bailed boxes, or in any tub of twenty-five pounds or less. (*No jars allowed.*)

13	L. E. Allen, Beaver Dam	$20	00
418	Maud Hodgson, Pewaukee,	10	00
889	Kate F. Peffer, Pewaukee	7	00

PRINT BUTTER.

For best exhibit of not less than 10 pounds.

No. 246	John Frick, Plymouth	$15 00
1097	Mrs. A. T. Tenney, Hartland	10 00
970	Miss J. Rabb, Mazomanie	5 00

BUTTER IN NOVEL FORMS OR DESIGNS.

For best exhibit of not less than 10 pounds.

1098	Mrs. S. A. Tenney, Hartland	$15 00

GRANULATED BUTTER.

Best jar of granulated butter. (Butter in this class must be shown in glass jars of not less than two quarts each.)

1210	Robert Wittke. Beaver Dam	5 00
1098	Mrs. S. A. Tenney, Hartland	3 00

Best sample twelve pounds or more of comb honey in most marketable shape.

324	Isaac Gale & Son. Waukesha	5 00
331	Chas H. Green, Waukesha	3 00

Best sample extracted honey, five pounds or more, in most marketable shape.

331	Chas. H. Green, Waukesha	5 00
324	Isaac Gale & Son, Waukesha	3 00

Best bee hive for comb honey.

331	Chas. H. Green, Waukesha	2 00

Best bee hive for extracted honey.

331	Chas. H. Green, Waukesha	2 00

Best honey extractor.

331	Chas. H. Green, Waukesha	2 00
329	A. L. Greengo, Colgate	1 00

Best colony of Italian bees in observatory hive.

331	Chas. H. Green, Waukesha	5 00

Best wax extractor.

No.	331	Chas. H. Green, Waukesha	$2 00

Best display of apiarian tools and fixtures.

	331	Chas. H. Green, Waukesha	4 00
	329	A. L. Greengo, Colgate	2 00

Best samples comb foundation.

	331	Chas. H. Green, Waukesha	2 00
	329	A. L. Greengo, Colgate	1 00

Best samples beeswax, five pounds or more.

	331	Chas. H. Green, Waukesha	2 00
	424	A. I. Hay, Raymond	1 00

DEPARTMENT G—FRUITS AND FLOWERS.

CLASS 41.—*Fruit by Professional Growers.*

APPLES.

Best display of varieties not to exceed twenty.

No.	403	C. Hirschinger, Baraboo	$10 00
	241	Wm. Fox, Baraboo	7 00

Best display of ten varieties.

	403	C. Hirschinger, Baraboo	6 00
	241	Wm. Fox, Baraboo	4 00

Best five varieties adapted to northwest.

	241	Wm. Fox, Baraboo	6 00
	403	C. Hirschinger, Baraboo	4 00

Best five varieties, winter.

No.			
	403	C. Hirschinger, Baraboo	$3 00
	241	Wm. Fox, Baraboo	2 00
	324	Isaac Gale & Son, Waukesha	1 00

Best show seedling apples, not less than five varieties each.

	403	C. Hirschinger, Baraboo	10 00

Best seedling winter apple, adaptation and quality considered.

	403	C. Hirschinger, Baraboo	3 00
	324	Isaac Gale & Son, Waukesha	2 00

Best seedling summer apple, adaptation and quality considered.

	403	C. Hirschinger, Baraboo	3 00

Best seedling fall apple, adaptation and quality considered.

	403	C. Hirschinger, Baraboo	3 00

Best show of ten varieties of Russian apples.

	241	Wm. Fox, Baraboo	10 00
	403	C. Hirschinger, Baraboo	7 00

Best plate Duchess of Oldenberg.

	241	Wm. Fox, Baraboo	1 00

Best plate of Famuse.

	241	Wm. Fox, Baraboo	1 00

Best plate of Golden Russett.

	241	Wm. Fox, Baraboo	1 00

Best plate of Pewaukee.

	241	Wm. Fox, Baraboo	1 00

Best plate of St. Lawrence.

	241	Wm. Fox, Baraboo	1 00

Best plate of Tallman Sweet.

	403	C. Hirschinger, Baraboo	1 00

Best plate of Utter.

	241	Wm. Fox, Baraboo	1 00

Best plate Alexander.

No. 403 C. Hirschinger, Baraboo..... $1 00

Best plate plumb cider.

403 C. Hirschinger, Baraboo..... 1 00

Best plate Wealthy.

241 Wm. Fox, Baraboo..... 1 00

Best plate McMahon's White.

403 C. Hirschinger, Baraboo..... 1 00

Best plate Orange Winter.

403 C. Hirschinger, Baraboo..... 1 00

Best plate Wolf River.

403 C. Hirschinger, Baraboo..... 1 00

Best plate Haas.

241 Wm. Fox, Baraboo..... 1 00

Best plate Fall Orange.

241 Wm. Fox, Baraboo..... 1 00

Best plate Longfield.

324 Isaac Gale & Son, Waukesha..... 1 00

Best plate Yellow Transparent.

241 Wm. Fox, Baraboo..... 1 00

Best plate Hibernal.

241 Wm. Fox, Baraboo..... 1 00

Largest apple.

403 C. Hirschinger, Baraboo..... 1 00

Handsomest apple.

403 C. Hirschinger, Baraboo..... 1 00

PEARS.

Best Flemish Beauty.

No.			
	241	Wm. Fox, Baraboo	$2 00
	403	C. Hirschinger, Baraboo	1 00

PLUMS.

Best three varieties.

573	Geo. J. Kellogg, Janesville	2 00
421	Wm. Fox, Baraboo	1 00

Best collection of native.

573	Geo. J. Kellogg, Janesville	2 00

Best plate of native.

403	C. Hirschinger, Baraboo	1 00

CLASS 42 — *Grapes and Crabs by Professional Growers.*

GRAPES.

Best and greatest display of varieties, five specimens each.

No.			
	241	Wm. Fox, Baraboo	$10 00
	324	Isaac Gale & Son, Waukesha	5 00
	573	Geo. J. Kellogg, Janesville	2 00

Best ten varieties.

241	Wm. Fox, Baraboo	5 00
324	Isaac Gale & Son, Waukesha	3 00

Best five varieties, three specimens.

241	Wm. Fox, Baraboo	3 00
324	Isaac Gale & Son, Waukesha	2 00

Best Concord.

573	Geo. J. Kellogg, Janesville	2 00
241	Wm. Fox, Baraboo	1 00

Best Delaware.

241	Wm. Fox, Baraboo	2 00
324	Isaac Gale & Son, Waukesha	1 00

Best Worden.

No.			
	241	Wm. Fox, Baraboo	$2 00
	824	Isaac Gale & Son, Waukesha	1 00

Best Moore's Early.

	824	Isaac Gale & Son, Waukesha	2 00
	241	Wm. Fox, Baraboo	1 00

Best Brighton.

	241	Wm. Fox, Baraboo	2 00
	824	Isaac Gale & Son, Waukesha	1 00

Best Early Victor.

	241	Wm. Fox, Baraboo	2 00
	824	Isaac Gale & Son, Waukesha	1 00

Best Duchess.

	241	Wm. Fox. Baraboo	2 00
	824	Isaac Gale & Son, Waukesha	1 00

Best Empire State.

	241	Wm. Fox, Baraboo	2 00
	824	Isaac Gale & Son, Waukesha	1 00

Best Wilder.

	241	Wm. Fox, Baraboo	2 00
	824	Isaac Gale & Son, Waukesha	1 00

Best Lindley.

	824	Isaac Gale & Son, Waukesha	2 00
	241	Wm. Fox, Baraboo	1 00

Best single variety, quality to rule.

	824	Isaac Gale & Son, Waukesha	2 00
	241	Wm. Fox, Baraboo	1 00

Best plate Lady.

	824	Isaac Gale & Son, Waukesha	1 00

Best plate Pocklington.

	241	Wm. Fox, Baraboo	1 00

Best plate Lady Washington.

	241	Wm. Fox, Baraboo	1 00

Best plate Vergennes.

No. 324 Isaac Gale & Son, Waukesha..... $1 00

Best plate Salem.

241 Wm. Fox, Baraboo..... 1 00

Best plate Agawam.

241 Wm. Fox, Baraboo..... 1 00

Best plate Merrimac.

241 Wm. Fox, Baraboo..... 1 00

Best plate Worden.

324 Isaac Gale & Son, Waukesha..... 1 00

Best plate Moore's Early.

241 Wm. Fox, Baraboo..... 1 00

Best plate Brighton.

241 Wm. Fox, Baraboo..... 1 00

Best plate Concord.

324 Isaac Gale & Son, Waukesha..... 1 00

CRABS.

Best and greatest variety named, not to exceed 10.

403 C. Hirschinger, Baraboo $4 00
573 Geo. J. Kellogg, Janesville 2 00

Best plate Hyslop.

403 C. Hirschinger, Baraboo..... 1 00

Best plate Transcendent.

403 C. Hirschinger, Baraboo... ..... $1 00

Best plate Whitney, No. 20.

403 C. Hirschinger, Baraboo.... ..... 1 00

Best plate Sweet Russett Seedling Crab.

324 Isaac Gale & Son, Waukesha..... ..... 2 00

SWEEPSTAKES ON FRUIT OF ALL KINDS.

Best collection fruit of all kinds.

No.			
	241	Wm. Fox, Baraboo	$12 00
	403	C. Hirschinger, Baraboo	9 00
	824	Isaac Gale & Son, Waukesha	6 00

CLASS 43.—*Fruit by Non-Professional Cultivators.*

APPLES.

Best display of varieties not to exceed twenty.

No.			
	484	Jas. Jenney, Weyauwega	$10 00
	884	J. S. Palmer, Baraboo	7 00
	488	Geo. Jeffrey, Milwaukee	3 00

Best display of ten varieties.

884	J. S. Palmer, Baraboo	6 00
484	Jas. Jenney, Weyauwega	4 00
488	Geo. Jeffrey, Milwaukee	2 00

Best five varieties adapted to northwest.

484	Jas. Jenney, Weyauwega	7 00
138	John Dey, Hortonville	5 00
884	J. S. Palmer, Baraboo	2 00

Best five varieties Winter.

884	J. S. Palmer, Baraboo	3 00
488	Geo. Jeffrey, Milwaukee	2 00

Best show of seeding apples, not less than five varieties.

1215	E. Wrightman, Weyauwega	3 0
884	J. S. Palmer, Baraboo	5 00

Best winter seeding apple, adaptation and quality considered.

1215	E. Wrightman, Weyauwega	3 00
884	J. S. Palmer, Baraboo	2 00

Best summer seeding apple, adaption and quality considered.

884	J. S. Palmer, Baraboo	3 00
488	Geo. Jeffrey, Milwaukee	2 00

Best fall seeding apples, adaption and quality considered.

1215	E. Wrightman, Weyauwega	3 00
884	J. S. Palmer, Baraboo	2 00

Best plate of Duchess of Oldenburg.

No. 484 Jas. Jenny, Weyauwego..... $1 00

Best plate of Famuse.

884 J. S. Palmer, Baraboo..... 1 00

Best plate of Golden Russett.

884 J. S. Palmer, Baraboo..... 1 00

Best plate of Pewaukee.

138 John Dey, Hortonville..... 1 00

Best plate of St. Lawrence.

884 J. S. Palmer, Baraboo..... 1 00

Best plate of Tallman Sweet.

884 J. S. Palmer, Baraboo..... 1 00

Best plate of Utter.

884 J. S. Palmer, Baraboo..... 1 00

Best plate of Alexander.

884 J. S. Palmer, Baraboo..... 1 00

Best plate of Plumb Cider.

884 J. S. Palmer, Baraboo..... 1 00

Best plate of Wealthy.

884 J. S. Palmer, Baraboo..... 1 00

Best plate of Orange Winter.

884 J. S. Palmer, Baraboo..... 1 00

Best plate of Wolf River.

1215 E. Wrightman Weyauwega..... 1 00

Best plate N. W. Greenings.

126 E. W. Daniels, Auroraville..... 1 00

Best plate Haas.

884 J. S. Palmer, Baraboo..... 1 00

Best plate of Fall Orange.

No. 884 J. S. Palmer, Baraboo..... ..... $1 00

Best plate Longfield.

488 Geo. Jeffrey, Milwaukee..... 1 00

Best plate of Yellow Transparent.

884 J. S. Palmer, Baraboo..... 1 00

Best plate of Hibernal.

488 Geo. Jeffrey, Milwaukee..... 1 00

Largest apple.

484 Jas. Jenney, Weyauwega..... ..... 1 00

Handsomest apple.

884 J. S. Palmer, Baraboo..... 1 00

PEARS.

Best three varieties.

488 Geo. Jeffrey, Milwaukee..... 2 00

Best Flemish Beauty.

488 Geo. Jeffrey, Milwaukee..... ..... 2 00

PLUMS.

Best three varieties.

884 J. S. Palmer, Baraboo..... 2 00
488 Geo. Jeffrey, Milwaukee..... 1 00

Best collection of natives.

884 J. S. Palmer, Baraboo..... 2 00

Best plate of natives.

488 Geo. Jeffrey, Milwaukee..... 1 00

CLASS 44 — *Grapes and Crabs by Non-Professional Growers.*

GRAPES.

Best and greatest display of varieties,

No.			
	740	J. S. McGowan, Janesville	$10 00
	884	J. S. Palmer, Baraboo	7 00
	488	Geo. Jeffrey, Milwaukee	3 00

Best ten varieties.

	884	J. S. Palmer, Baraboo	5 00
	740	J. S. McGowan, Janesville	3 00

Best five varieties.

	740	J. S. McGowan, Janesville	3 00
	884	J. S. Palmer, Baraboo	2 00
	488	Geo. Jeffrey, Milwaukee	1 00

Best Concord.

	884	J. S. Palmer, Baraboo	2 00
	740	J. S. McGowan, Janesville	1 00

Best Delaware.

	884	J. S. Palmer, Baraboo	2 00
	740	J. S. McGowan, Janesville	1 00

Best Worden.

	740	J. S. McGowan, Janesville	2 00
	884	J. S. Palmer, Baraboo	1 00

Best Moore's Early.

	884	J. S. Palmer, Baraboo	2 00

Best Brighton.

	884	J. S. Palmer, Baraboo	2 00

Best Early Victor.

	884	J. S. Palmer, Baraboo	2 00

Best Duchess.

	884	J. S. Palmer, Baraboo	2 00

Best Empire State.

No. 884 J. S. Palmer, Baraboo..... $2 00

Best Wilder.

884 J. S. Palmer, Baraboo..... 2 00

Best Lindley.

884 J. S. Palmer, Baraboo..... 2 00

Best single variety, quality to rule.

884 J. S. Palmer, Baraboo..... 3 00
740 J. S. McGowan, Janesville..... 2 00

Best plate Lady.

740 J. S. McGowan, Janesville..... 1 00

Best plate Pocklington.

884 J. S. Palmer, Baraboo..... 1 00

Best plate Lady Washington.

884 J. S. Palmer, Baraboo..... 1 00

Best plate Vergennes.

884 J. S. Palmer, Baraboo..... 1 00

Best plate Salem.

740 J. S. McGowan, Janesville..... 1 00

Best plate Agawam.

740 J. S. McGowan, Janesville..... 1 00

Best plate Merrimac.

740 J. S. McGowan, Janesville..... 1 00

Best plate Concord.

884 J. S. Palmer, Baraboo..... 1 00

Best plate Brighton.

884 J. S. Palmer, Baraboo..... 1 00

Best plate Moore's Early.

884 J. S. Palmer, Baraboo..... 1 00

Best plate Worden.

No. 884 J. S. Palmer, Baraboo..... $1 00

CRABS.

Best and greatest variety named.

884 J. S. Palmer, Baraboo..... $4 00
488 Geo. Jeffrey, Milwaukee..... 2 00

Best plate Hyslop.

884 J. S. Palmer, Baraboo..... 1 00

Best plate Transcendant.

884 J. S. Palmer, Baraboo..... 1 00

Best plate Whitney No. 20.

488 Geo. Jeffrey, Milwaukee..... 1 00

SWEEPSTAKES ON FRUIT — ALL KINDS.

Best collection of fruits of all kinds.

884 J. S. Palmer, Baraboo..... $12 00
488 Geo. Jeffrey, Milwaukee..... 9 00
740 J. S. McGowan, Janesville.. .. .. 6 00

CLASS 45.— *Nursery Trees.*

Best collection of deciduous nursery grown trees, quality to rule. Diploma

No. 891 J. C. Plumb, Milton.....Diploma

Best collection of evergreens.

891 J. C. Plumb, Milton..... .....Diploma

Best collection fruit trees.

824 Isaac Gale & Son, Waukesha.....Diploma

Best collection apple trees.

403 C. Hirschinger, Baraboo..... .....Diploma

CLASS 46 — *Flowers by Professional Cultivators.*

Best and most artistically arranged floral designs.

No.			
	117	Currie Bros., Milwaukee	$10 00
	973	G. W. Ringrose, Wauwatosa	6 00

Best and most tastefully arranged basket of flowers.

	117	Currie Bros., Milwaukee	5 00
	973	G. W. Ringrose, Wauwatosa	3 00

Best collection cut flowers.

	117	Currie Bros., Milwaukee	5 00
	973	G. W. Ringrose, Wauwatosa	3 00

Best bouquet.

	117	Currie Bros., Milwaukee	3 00
	973	G. W. Ringrose, Wauwatosa	2 00

Best ten named dahlias.

	871	J. C. Plumb, Milton	3 00

Best display roses.

	117	Currie Bros., Milwaukee	5 00
	973	G. W. Ringrose, Wauwatosa	3 00

Best five named variety of roses.

	117	Currie Bros., Milwaukee	4 00
	973	G. W. Ringrose, Wauwatosa	1 00

Best display verbenas.

	117	Currie Bros., Milwaukee	2 00

Best show pansies.

	1091	Wm. Toole, Baraboo	5 00
	973	G. W. Ringrose, Wauwatosa	3 00

Best show asters.

	1091	Wm. Toole, Baraboo	2 00

Best show gladiolus.

	973	G. W. Ringrose, Wauwatosa	4 00
	117	Currie Bros., Milwaukee	2 00

Best show green house plants, not less than twenty-five or more than fifty varieties.

No. 117	Currie Bros., Milwaukee	20	00
973	G. W. Ringrose, Wauwatosa	10	00

Best twenty varieties green house plants in bloom.

973	G. W. Ringrose, Wauwatosa	5	00
117	Currie Bros., Milwaukee	3	00

Best ten geraniums.

117	Currie Bros., Milwaukee	5	00

Best six fuchsias.

973	G. W. Ringrose, Wauwatosa	10	00

Best display of flowers of all kinds grown by the exhibitor.

973	G. W. Ringrose, Wanwatosa	10	00

Best display of ornamental foliage plants, not less than fifteen varieties.

No. 117	Currie Bros., Milwaukee	8	00
973	G. W. Ringrose, Wauwatosa	4	00

Best display of ferns, irrespective of where grown.

117	Currie Bros., Milwaukee	Diploma.
973	G. W. Ringrose, Wauwatosa	Diploma.

CLASS 47 — *Flowers by Non-Professianal Cultivators.*

Best and most artistically arrange floral design.

1047	M. V. Sheldon, Racine	5	00
968	Mrs. C. H. Root, Ripon	3	00

Best collection cut flowers.

968	Mrs. C. H. Root, Ripon	4	00
1047	M. V. Sheldon, Racine	3	00

Best and most tastefully arranged basket flowers.

968	Mrs. C. H. Root, Ripon	3	00
1047	M. V. Sheldon, Racine	2	00

Best bouquet.

No.			
	968	Mrs. C. H. Root, Ripon	$3 00
	1047	M. V. Sheldon, Racine	2 00

Best pair round bouquets.

968	Mrs. C. H. Root, Ripon	2 00
415	Wm. Harland, Duplainsville	1 00

Best pair flat table bouquets.

968	Mrs. C. H. Root, Ripon	2 00
415	Wm. Harland, Duplainsville	1 00

Best bouquet everlasting flowers.

415	Wm. Harland, Duplainsville	2 00

Best display dahlias, not more than twenty varieties.

889	Kate F. Peffer, Pewaukee	2 00

Best ten named dahlias.

1047	M. V. Sheldon, Racine	2 00

Best display roses.

968	Mrs. C. H. Root, Ripon	3 00

Best five named varieties roses.

968	Mrs. C. H. Root, Ripon	3 00

Best display verbenas.

968	Mrs. C. H. Root, Ripon	2 00

Best ten named verbenas.

968	Mrs. C. H. Root, Ripon	2 00

Best show asters in quality and variety.

1047	M. V. Sheldon, Racine	2 00

Best show perennial phlox.

968	Mrs. C. H. Root, Ripon	1 00

Best show pansies.

415	Wm. Harland, Duplainsville	2 00

Best show double petunias.

No.	968	Mrs. C. H. Root, Ripon	$1 00

Best show dianthuses (pink).

	968	Mrs. C. H. Root, Ripon	1 00

Best show gladiolus.

	1047	M. V. Sheldon, Racine	2 00

Best show phlox drummondi.

	868	Mrs. C. H. Root, Ripon	1 00

Best show Tube roses.

	968	Mrs. C. H. Root, Ripon	1 00

Best show lillies.

	968	Mrs. C. H. Root, Ripon	2 00

Best show stocks.

	968	Mrs. C. H. Root, Ripon	1 00

Best show balsams.

	968	Mrs. C. H. Root, Ripon	1 00

Best show green house plants, not less than 25 nor more than 50 varieties.

	562	Mrs. C. C. Kingsley, Milwaukee	6 00

Best ten varieties green house plants in bloom.

	562	Mrs. C. C. Kingsley, Milwaukee	3 00

Best ten geraniums.

	562	Mrs. C. C. Kingsley, Milwaukee	3 00

Best six fuchias.

	562	Mrs. C. C. Kingsley, Milwaukee	2 00

Best display flowers raised by exhibitor.

No.	415	Wm. Harland, Duplainsville	$6 00
	562	Mrs. C. C. Kingsley, Milwaukee	3 00

Best show ornamental foliage plants, not more than 10 varieties.

	562	Mrs. C. C. Kingsley, Milwaukee	6 00

DEPARTMENT I—MANUFACTURES.

Best sample brick.

No.	82	E. Chase & Sons, Milwaukee	$2 00

Best roofing material other than shingle.

	801	National Sheet Metal Roofing Co., New York	5 00

Best four window blinds.

	887	George Poppert, Milwaukee	5 00

Best four doors.

	887	George Poppert, Milwaukee	5 00

CLASS 51—*Stoves, Furnaces, Hollow Ware and Articles of Hardware.*

Best cooking stove for coal.

	46	Brand Stove Co., Milwaukee	5 00

Best cooking stove for wood.

No. 46 Brand Stove Co., Milwaukee..... $5 00

Best cooking range for families.

406 Helgendorf, Kelloge & Co., Milwaukee... ..... 5 00

Best Ornamental Parlor Stove.

46 Brand Stove Co., Milwaukee..... 5 00

Best display of stoves.

46 Brand Stove Co., Milwaukee ..... Grand silver medal.

Best display of oil or gasoline stoves.

744 W. H. Munn & Co., Milwaukee..... ..... Diploma.

Best exhibition brass and copper ware.

1058 Schwartz Stove Co., Milwaukee..... Diploma.

Best horse shoes in variety.

87 Chas. Carman, Madison..... 2 00

CLASS 52 — *Silver, Brittannia and Crockery Ware.*

Best collection glass, china and earthenware.

No. 1051 W. K. Stafford, & Co., Milwaukee..... Diploma.

CLASL 53 — *Surgical, Dental, Mathematical and Philosophical Instruments and Apparatus.*

Best display dentistry.

No. 132 W. A. Dartt, Milwaukee..... Diploma.

Best skill in dental work.

574 A. J. Kluppak, Milwaukee..... Diploma.

CLASS 55 — *Carriages, Wagon Works, Etc.*

Best two seated open carriage.

No.	131	John Dorsch, Milwaukee	$5 00
	733	Milwaukee Buggy Co., Milwaukee	3 00

Best two seated top carriage.

	721	Michigan Buggy Co., Oshkosh	10 00
	419	Henney Buggy Co., Freeport, Ill	5 00

Best single top buggy.

	419	Henney Buggy Co., Freeport, Ill	5 00
	1044	T. C. Smith & Co., Milwaukee	3 00

Best open buggy.

	419	Henney Buggy Co.. Freeport, Ill	5 00
	721	Michigan Buggy Co., Oshkosh	3 00

Best speeding road wagon.

	419	Henney Buggy Co., Freeport, Ill	5 00

Best Phaeton.

	419	Henney Buggy Co., Freeport, Ill	5 00
	721	Michagan Buggy Co., Oshkosh	3 00

Best two seated light sleigh.

	131	John Dorsch, Milwaukee	5 00

Best double farm sleigh.

	84	Geo. C. Cribb, Milwaukee,	5 00

Best single-seated cutter and swell box.

	131	John Dorsch, Milwaukee	3 00
	1044	T. C. Smith & Co., Milwaukee	2 00

Best single or double Portland.

	1044	T. C. Smith & Co., Milwaukee	5 00
	721	Michigan Buggy Co., Oshkosh	3 00

Best common farm wagon.

	162	John Esch & Son, Milwaukee	5 00
	733	Milwaukee Buggy Co., Milwaukee	3 00

Best fancy farm wagon.

No.	84	Geo. C. Cribb, Milwaukee	$5 00
	131	John Dorsch, Milwaukee	3 00

Best three or four spring and three seated wagon.

	733	Milwaukee Buggy Co., Milwaukee	5 00

Best two seated surrey wagon.

	721	Michigan Buggy Co., Oshkosh	5 00
	419	Henney Buggy Co., Freeport, Ill	3 00

Best combination spring wagon.

	733	Millwaukee Buggy Co., Milwaukee	5 00
	84	Geo. C. Cribb, Milwaukee	3 00

Best brewers' wagon.

	9	C. Abresch, Milwaukee	Diploma
	723	John L. Miller, Milwaukee	Diploma

Best spindle box wagon.

	721	Michigan Buggy Co., Oshkosh	3 00

Best road cart.

	1061	D. M. Sechler, Moline	5 00
	1063	H. A. Staver, Chicago	3 00

Best delivery wagon.

	131	John Dorsch, Milwaukee	5 00
	84	Geo. C. Cribb, Milwaukee	3 00

CLASS 56.— *Cabinetware, Cooperage, Willow Ware, House Building Material, etc.*

Best parlor set.

No.	731	Matthews Bros., Milwaukee	$10 00
	57	Boettcher & Schimmel, Milwaukee	5 00

Best chamber set.

	731	Matthews Bros., Milwaukee	10 00

Best extension table.

No. 731	Matthews Bros., Milwaukee	$3 00

Best center table.

731	Matthews Bros., Milwaukee	3 00
1121	J. B. Van Camp, Higham	2 00

Best book case.

731	Matthews Bros., Milwaukee	3 00

Best ladies' workstand.

731	Matthews Bros., Milwaukee	3 00

Best writing table or desk.

731	Matthews Bros., Milwaukee	3 00

Best spring bed bottom.

731	Matthews Bros., Milwaukee	3 00

Best six dining chairs.

731	Matthews Bros., Milwaukee	3 00

Best reclining chair.

731	Matthews Bros., Milwaukee	5 00

HARNESS, ETC.

Best carriage, harness, double.

1044	T. C. Smith & Co., Milwaukee	5 00

Best single harness.

750	Michigan Harness Co., Jackson, Mich	3 00

Best gent's saddle.

1044	T. C. Smith & Co., Milwaukee	3 00

Best lady's saddle.

1044	T. C. Smith & Co., Milwaukee	3 00

Best four horse collars.

No. 1044	T. C. Smith & Co., Milwaukee	$2 00

Best exhibition of shoes, one pair each.

978	A. W. Rich &. Co., Milwaukee	5 00

Best exhibition of shoes manufactured in the state, one pair each.

333	Gimbel Bros., Milwaukee	10 00
86	Copeland & Ryder, Jefferson	5 00

Best exhibition of carpets and rugs.

333	Gimbel Bros., Milwaukee	10 00

Best fleece long wool.

1220	A. Weingandt, Milwaukee	$2 and Dip.

CLOTHING, HATS, FURS, ETC.

Best suit men's clothing.

66	Browning, King & Co., Milwaukee	5 00
83	Chicago Bell, Milwaukee	3 00

Best suit boy's clothing.

66	Browning, King & Co., Milwaukee	5 00
83	Chicago Bell, Milwaukee	3 00

Best exhibition gent's hats and caps.

83	Chicago Bell, Milwaukee	3 00

Best exhibition of furs and fur goods.

429	Hanson Fur Co., Milwaukee	10 00
333	Gimbel Bros., Milwaukee	5 00

Best six pairs buckskin gloves.

No.	429	Hanson Fur Co., Milwaukee	$5 00

Best six pairs buckskin mittens.

	429	Hanson Fur Co., Milwaukee	5 00

DEPARTMENT K — FINE ARTS.

Best exhibit sewing machines.

	809	Chas. F. Netzzon, Milwaukee	Diploma.

CLASS 61 — *Sewing Machine work.*

Best display sewing machine work.

No.	809	Chas. F. Netzzon, Milwaukee	$10 00
	1097	Mrs. A. L. Tenny, Hartland	5 00

CLASS 62 — *Works of Art.*

Best collection oil paintings, not less than twenty-five.

No.	976	Roebel & Reinhardt, Milwaukee	$40 00
	888	Mrs. Orris Pratt, Spring Prairie	20 00

Best collection oil paintings, not less than ten.

No.	1094	Mrs. Floy Miner Trapp, Chicago	15 00
	888	Mrs. Orris Pratt, Spring Green	10 00

Best oil painting.

No. 976	Roebel & Reinhardt, Milwaukee	$10 00

Best collection paintings in water colors, not less than twenty-five.

568	Mrs. Jean Kavanaugh, Milwaukee	15 00
1094	Mrs. Floy Miner Trapp, Chicago	10 00

Best painting in water colors.

568	Mrs. Jean Kavanaugh, Milwaukee	5 00

Best collection of steel engravings, not less than twenty-five.

976	Roebel & Reinhardt, Milwaukee	15 00

Best steel engraving.

976	Roebel & Reinhardt, Milwaukee	5 00

Best collection etchings, not less than twenty-five.

976	Roebel & Reinhardt, Milwaukee	15 00

Best etching.

976	Roebel & Reinhardt, Milwaukee	5 00

Best crayon drawing.

966	Birdie M. Rogers, Milwaukee	5 00

CLASS 63 — *Artists' Class.*

Best portrait in oil.

No. 408	Henry Hess, Madison	$12 00
60	Mrs. L. M. Buell, Beloit	8 00

Best original landscape in oil.

1086	C. Trodupp, Milwaukee	12 00
1094	Mrs. Floy Miner Trapp, Chicago	8 00

Best landscape in oil.

1086	C. Trodupp, Milwaukee	8 00
888	Mrs. Oris Pratt, Spring Prairie	5 00

Best painting of horse from life.

No. 1086	C. Trodupp, Milwaukee	$10 00

Best painting of cow or bull from life.

888	Mrs. Orris Pratt, Spring Prairie	10 00

Best painting of sheep from life.

1086	C. Trodupp, Milwaukee	8 00

Best painting still life in oil.

102	Mrs. R. H. Cook, Janesville	10 00

Best marine painting in oil.

1086	C. Trodupp, Milwaukee	12 00
403	Mrs. James Hamilton, Milwaukee	8 00

Best game painting in oil.

48	E. W. Beebe, Milwaukee	5 00
402	Mrs. James Hamilton, Milwaukee	3 00

Best fruit piece in oil.

568	Mrs. Jean Kavanaugh, Milwaukee	5 00

Best plaque painting in oil.

568	Mrs. Jean Kavanaugh, Milwaukee	5 00

Best panel painting in oil.

568	Mrs. Jean Kavanaugh, Milwaukee	5 00

Best flower painting in oil.

417	M. F. Hillman, Brandon	5 00

Best figure painting in oil.

102	Mrs. R. Cook, Janesville	5 00

Best collection of oil paintings by Wisconsin artists, not less than fifteen pictures.

658	Mrs. Jean Kavanaugh, Milwaukee	40 00
1086	C. Trodupp, Milwaukee	20 00

Best landscape in water colors.

No. 102 Mrs. R. H. Cook, Janesville..... $5 00

Best marine painting in water colors.

102 Mrs. R. H. Cook, Janesville..... 5 00

Best figure painting in water colors.

568 Mrs. Jean Kavanaugh, Milwaukee..... 3 00

Best painting still life in water colors.

102 Mrs. R. H. Cook, Janesville..... 3 00

Best specimen bird painting in water colors.

1057 Miss E. Slocum, Milwaukee..... 3 00

Best portrait in water colors.

Mrs. Jean Kavanaugh, Milwaukee..... 3 00

Best panel painting in water colors.

1094 Mrs. Floy Miner Trapp, Chicago..... 3 00

Best flower painting in water colors.

568 Mrs. Jean Kavanaugh, Milwaukee..... 3 00

Best collection of paintings in water colors by Wisconsin artists.

568 Mrs. Jean Kavanaugh, Milwaukee..... 15 00
888 Mrs. Orris Pratt, Spring Prairie..... 5 00

Best landscape in pastel from nature.

402 Mrs. James Hamilton, Milwaukee..... 3 00

Best fruit in pastel from nature.

60 Mrs. L. M. Buell, Beloit..... 3 00

Best flowers in pastel from nature.

245 Mrs. Mary Fitch, Sun Prairie..... 3 00

Best figure in pastel from nature.

802 Ida J. Neilson, Good Hope..... 3 00

Best single piece China painting.

1094 Mrs. Floy Miner Trapp, Chicago..... 3 00

Best collection China paintings.

No. 1094	Mrs. Floy Miner Trapp, Chicago	$5 00

Best landscape photograph.

20	W. A. Armstrong, Milwaukee	2 00

Best collection photographs and other sun pictures made by exhibitor.

20	W. A. Armstrong, Milwaukee	8 00
405	Thos. E. Hutchinson, Milwaukee	5 00

Best collection photographic copies of oil paintings.

405	Thos. E. Hutchinson, Milwaukee	8 00

Best crayon drawing by exhibitor.

802	Ida J. Neilson, Good Hope	5 00

Best crayon from photograph.

883	E. E. Palmer, Baraboo	5 00

Best pencil drawing.

802	Ida J. Neilson, Good Hope	3 00

Best specimen of charcoal or free hand drawing (work of pupil).

802	Ida J. Neilson, Good Hope	3 00

Best repousse or hammered brass work.

1094	Mrs. Floy Miner Trapp, Chicago	3

Best display of coins.

242	John P. Felscker, Milwaukee	Diploma.

DEPARTMENT L—WOMAN'S WORK.

CLASS 65—*Needle Work, Fancy Work and Decorative Art.*

Best sample plain sewing, embracing the different stitches used in household sewing and repairing, hand work.

No. 259	Mrs. A. H. Foster, Milwaukee	$2 00

Best set hand embroidered underclothes, hand made.

803	Mrs. Tina Newton, Beaver Dam	2 00

Best set of embroidered underclothes, machine made.

1053	Mrs. A. D. Smith, Burlington	2 00

Best specimen hand braid work.

41	Miss Genevieve F. Bartels, Milwaukee	1 00

Best specimen pillow shams, linen or cotton.

803	Mrs. Tina Newton, Beaver Dam	1 00

Best specimen table scarf or spread.

979	Bertha Renk, Milwaukee	2 00
807	Mrs. John Nicholson, Monroe	1 00

Best embroidered piano cover.

807	Mrs. John Nicholson, Monroe	2 00

Best wall banner, not painted.

979	Bertha Renk, Milkwaukee	2 00

Best mantle lambrequin.

259	Mrs. A. H. Foster, Milwaukee	2 00

Best window lambrequin.

807	Mrs. John Nicholson, Monroe	2 00

Best infant's robe and skirt.

No. 259 Mrs. A. H. Foster, Milwaukee..... $2 00

Best exhibition point lace, work of exhibitor.

803 Mrs. Tina Newton, Beaver Dam..... 2 00

Best exhibition Honiton lace, work of exhibitor.

164 Mrs. E. A. Easton, Milwaukee..... 2 00

Best exhibition any kind lace, work of exhibitor.

979 Bertha Renk, Milwaukee..... 2 00

Best specimen darned lace.

485 Hilga Jackwitz, Milwaukee..... 2 00

Best specimen etching on silk, satin or linen.

259 Mrs. A. H. Foster, Milwaukee..... 2 00

Best picture embroidery.

979 Bertha Renk, Milwaukee..... 2 00

Best Kensington embroidery.

807 Mrs. John Nicholson, Monroe..... 2 00

Best chenille embroidery.

807 Mrs. John Nicholson, Monroe..... 2 00

Best silk embroidered child's dress, hand made.

115 Nettie Corrigan, Milwaukee..... 2 00

Best arasene embroidery.

807 Mrs. John Nicholson, Monroe..... 2 00

Best needle work or floss embroidery, linen or cotton.

259 Mrs. A. H. Foster, Milwaukee..... 2 00

Best silk embroidery, hand made, with white silk floss.

58 Mrs. Annie C. Baker, Milwaukee..... 2 00

Best silk embroidery, hand made, with colored silk floss.

47 Miss Geneviere F. Bartels, Milwaukee..... 2 00

Best specimen applique embroidery.

No. 485 Hilga Jackwitz, Milwaukee..... $2 00

Best specimen applique embroidery, on lace.

803 Mrs. Tina Newton, Beaver Dam..... 2 00

Best specimen rope silk embroidery.

47 Miss Genieviere F. Bartels, Milwaukee 2 00

Best specimen embroidery on bolting cloth.

47 Miss Genevieve F. Bartels, Milwaukee..... 2 00

Best specimen embroidery on pine-apple silk.

47 Miss Genevieve F. Bartels, Milwaukee..... 2 00

Best specimen Russian embroidery.

47 Miss Genevieve F. Bartels, Milwaukee..... 2 00

Best specimen Sorrento embroidery.

972 Mrs. G. Rood, Stevens Point..... 2 00

Best cotton tidy.

164 Mrs. E. A. Easton, Milwaukee..... 1 00

Best worsted tidy.

571 Mrs. F. W. Kingbury, Stevens Point..... 1 00

Best easel scarf.

1230 Jennie Winding, Milwaukee..... 1 00

Best toilet cushion.

47 Miss Genevieve F. Bartels, Milwaukee 2 00

Best sofa cushion.

47 Miss Genevieve F. Bartels, Milwaukee..... 2 00

Best Ottoman cover.

91 Florence Chubuck, Hudson..... 2 00

Best hand decorated table.

979 Bertha Renk, Milwaukee..... 8 00

Best decorated chair.

No. 47 Miss Genevieve F. Bartels, Milwaukee..... $3 00

Best cut work embroidrey.

47 Miss Genevieve F. Bartels, Milwaukee..... 2 00

Best embroidery in form work.

47 Miss Genevieve F. Bartels, Milwaukee..... 2 00

Best mounted fire screen, not painted.

47 Miss Genevieve F. Bartels, Milwaukee..... 3 00

Best French embroidery.

103 Mrs. C. L. Clark, Janesville..... 2 00

Best collection articles in drawn work.

1094 Mrs. Floy Miner Tripp, Chicago..... 3 00

Best toilet set, bottles and cushion.

423 Mrs. D. Higgins, Milwaukee..... 2 00

Best afghan.

807 Mrs. John Nicholson, Monroe..... 3 00

245 Mrs. Mary Fitch, Sun Prairie..... 1 00

Best set of dollies.

47 Miss Genevieve F. Bartels, Milwaukee..... 2 00

Best embroidered foot rest.

47 Miss Genevieve F. Bartels, Milwaukee..... 3 00

CLASS 66.— *Work of boys and girls under fifteen years of age.*

Best patch work quilt.

No. 18 Ella Austin, Miilwaukee..... $2 00

Best sample of plain sewing.

18 L. E. Allen, Beaver Dam..... .... 2 00

Best sample of darning.

18 Ella Austin, Milwaukee 2 00

Best hand-knit stockings.

894 Miss Chloe Pierce, Hartford.... ..... 2 00

Best hand-knit mittens.

18 Ella Austin, Milwaukee..... ..... 2 00

Best toilet mats.

752 Annie Michelet, Milwaukee 1 00

Best Kensington embroidery.

85 Mrs. Vic H. Campbell, Evansville 1 00

Best rug.

894 Miss Chloe Pierce, Hartford..... 1 00

Best handkerchief in drawn work.

18 Ella Austin, Milwaukee 1 00

Best landscape pencilling.

18 Ella Austin, Milwaukee..... 2 00

Best loaf of Graham bread.

18 Ella Austin, Milwaukee..... 2 00

Best doll's outfit by girl under thirteen years of age.

18 Ella Austin, Milwaukee..... 3 00

CLASS 67 — *Domestic Manufacturers.*

Best Kersey blanket.

No. 41	Mrs. L. R. Burgess, Madison	$4 00

Best rug of any material.

807	Mrs. John Nicholson. Monroe	4 00

Best drawn rug.

114	Misses Clainfust & Hall, Milwaukee	2 00

Best braided rug.

41	Mrs. L. R. Burgess, Madison	3 00

Best ten yard rag carpet.

822	C. A. Gibson, Fox Lake	4 00
1098	Mrs. S. A. Tenney, Hartland	2 00

Best woolen stockings.

571	Mrs. F. W. Kingsbury, Stevens Point	2 00

Best woolen socks.

41	Mrs. L. R. Burgess, Madison	2 00

Best fancy knitting work.

326	Mrs. Geo. Guenther, Milwaukee	2 00

Best silk mittens.

1053	Mrs. A. D. Smith, Burlington	2 00

Best crochet ladies' skirt.

91	Florence Chubback, Hudson	3 00
972	Mrs. G. Rood, Stevens Point	1 00

Best hand knit ladies under vest.

41	Mrs. L. R. Burgess, Madison	3 00

Best hand knit ladies' skirt.

47	Miss Genevieve F. Bartels, Milwaukee	3 00
326	Mrs. Geo. Guenther, Milwaukee	1 00

Best collection of crochet work.

No. 326	Mrs. Geo. Guenther, Milwaukee	$2 00

Best crochet or knitted slippers or shoes.

164	Mrs. E. A. Easton Milwaukee	3 00

Best white quilt, quilted, hand work.

98	Mrs. J. A. Chadwick, Watertown	4 00
41	Mrs. L. R. Burgess, Madison	2 00

Best silk quilt, quilted.

807	Mrs. John Nicholson, Monroe	4 00
42	Mrs. A. C. Bates, Janesville	2 00

Best log cabin quilt (not silk), quilted.

259	Mrs. A. H. Foster, Milwaukee	4 00
970	Miss J. Rabb, Mazomanie	2 00

Best silk log cabin quilt, quilted.

807	Mrs. John Nicholson, Monroe	4 00
981	Mrs. M. M. Rowell, Beaver Dam	2 00

Best patch work quilt, quilted.

244	Mrs. Adam Fomberg, Fox Lake	4 00
98	Mrs. J. A. Chadwick, Watertown	2 00

Best knit counterpane.

826	Mrs. Geo. Guenther, Milwaukee	4 00
826	Mrs. Geo. Guenther, Milwaukee	2 00

Best crochet counterpane.

1076	Mrs. E. Shea, Milwaukee	4 00
727	Allie L. Mayhew, Burnett Station	2 00

Best crochet or knit pillow shams.

727	Allie L. Mayhew, Burnett Station	3 00

Best window or door curtain.

807	Mrs. John Nicholson, Monroe	2 00

Best exhibition of ladies' dress made by other than professional.

47	Miss Genevieve F. Bartels, Milwaukee	4 00
259	Mrs. A. H. Foster, Milwaukee	2 00

Best specimen of darning.

No. 259	Mrs. A. H. Foster, Milwaukee	$2 00

Best specimen patched mending.

803	Mrs. Tina Newton, Beaver Dam	2 00

Best crochet shawl.

888	Mrs. Orris Pratt, Spring Prairie	3 00

Best knit shawl.

892	Laura Peter, Racine	3 00

CLASS 68.—*Household Products.*

Best loaf graham bread.

No. 972	Mrs. G. Rood, Stevens Point	$3 00
1288	Miss Grace Wadsworth, Milwaukee	2 00

Best loaf white bread.

19	Mrs. John Amberg, Milwaukee	3 00
321	Mrs. H. J. Graff, Milwaukee	2 00

Best loaf Indian bread.

803	Mrs. Tina Newton, Beaver Dam	3 00
62	Mrs. Geo. Brown, Wauwatosa	2 00

New England Brown Bread.

973	Mrs. G. Rood, Stevens Point	3 00

Best chocolate gold cake.

19	Mrs. John Amberg, Milwaukee	2 00
1097	Mrs. A. L. Tenny, Hartland	1 00

Best fruit cake.

288	Miss Belle Goodyear, Tomah	2 00
1066	Mrs. H. E. Sutton, Columbus	1 00

Best doughnuts.

967	Mrs. E. M. Reynolds, Milwaukee	2 00
1128	Lucy Underwood, Wauwatosa	1 00

Best English walnut cream cake.

No. 19	Mrs. John Amberg, Milwaukee	$2 00

Best almond cream cake.

91	Florence Chubbuck, Hudson	2 00
1049	Mrs. W. E. Swan, North Prairie	1 00

Best chocolate caramel cake.

118	Thos. Clark, Beecher, Ill	3 00
19	Mrs. John Amberg, Milwaukee	2 00

Best chocolate cream cake.

19	Mrs. John Amberg, Milwaukee	2 00

Best angel food cake.

19	Mrs. John Amberg, Milwaukee	2 00
972	Mrs. G. Rood, Stevens Point	1 00

Best orange cake.

118	H. A. Clark, Caldwell	2 00
1049	Mrs. W. E. Swan, North Prairie	1 00

Best fig cake.

1233	Mrs. Walter Warren, Fox Lake	2 00
1049	Mrs. W. E. Swan, North Prairie	1 00

Best and largest exhibition of articles of above sort.

19	Mrs. John Amberg, Milwaukee	5 00
1049	Mrs. W. E. Swan, North Prairie	3 00

SEALED AND PRESERVED FRUITS AND PICKLES.

Best canned peaches.

968	Mrs. C. H. Root, Ripon	2 00

Best canned plums.

1128	Lucy Underwood, Wauwatosa	2 00

Best canned currants.

968	Mrs. C. H. Root, Ripon	2 00

Best canned tomatoes.

970	Miss J. Rabb, Mazomanie	2 00

Best canned gooseberries.

No. 248 Mrs. C. T. Fisher, Wauwatosa..... $2 00

Best canned raspberries.

248 Mrs. C. T. Fisher, Wauwatosa..... 2 00

Best canned strawberries.

483 Rilla M. Johnson, Wauwatosa..... 2 00

Best canned grapes.

1235 Mrs. Walter Warren, Fox Lake..... 2 00

Best canned blackberries.

1235 Mrs. Walter Warren, Fox Lake 2 00

Best canned cherries.

1235 Mrs. Walter Warren, Fox Lake 2 00

Best canned pears.

968 Mrs. C. H. Root, Ripon..... 2 00

Best canned hyslop or transcendant crabs.

968 Mrs. C. H. Root, Ripon..... ... 2 00

Best plum jelly.

968 Mrs. C. H. Root, Ripon..... ..... 2 00

Best currant jelly.

1235 Mrs. Walter Warren, Fox Lake..... 2 00

Best red raspberry jelly.

968 Mrs. C. H. Root, Ripon 2 00

Best crab apple jelly.

1235 Mrs. Walter Warren, Fox Lake..... 2 00

Best grape jelly.

1065 Mrs. A. P. Stafford, Fox Lake..... 2 00

Best quince jelly.

1235 Mrs. Walter Warren, Fox Loke..... 2 00

Best raspberry jam.

No. 968 Mrs. C. H. Root, Ripon..... $2 00

Best blackberry jam.

1063 Mrs. A. P. Spafford, Fox Lake..... 2 00

Best sweet pickled peaches.

1235 Mrs. Walter Warren, Fox Lake..... 2 00

Best sweet pickled apples.

248 Mrs. C. T. Fisher, Wauwautosa..... 2 00

Best pickled pears.

1235 Mrs. Walter Warren, Fox Lake..... ... 2 00

Best Chili sauce.

968 Mrs. C. H. Root, Ripon..... 2 00

Best tomato catsup.

164 Mrs. E. A. Easton, Milwaukee..... 2 00

Best sour pickles.

248 Mrs. C. T. Fisher, Wauwatosa..... 2 00

Best cucumbers.

407 Mrs. S. Hounsel, Fond du Lac..... 2 00

Best cauliflower.

968 Mrs. C. H. Root, Ripon..... ..... 2 00

Best onions.

1063 Mrs. A. P. Stafford, Fox Lake..... 2 00

Best mixed.

1211 Mrs. H. M. Warner, Milwaukee..... 2 00

Best and largest exhibition fruits, jellies, jams and pickles, in glass jars.

1235 Mrs. Walter Warren, Fox Lake..... ..... 5 00

CLASS 69.—*Miscellaneous.*

Best china painting, single piece.

No. 1094	Mrs. Floy Miner Trapp, Chicago	$3 00

Best collection china painting.

1094	Mrs. Floy Miner Trapp, Chicago	5 00

Best potpourri jar.

1094	Mrs. Floy Miner Trapp, Chicago	3 00

Best fruit set.

1094	Mrs. Floy Miner Trapp, Chicago	4 00

Best specimen art pottery.

164	Mrs. E. A. Easton, Milwaukee	3 00

Best wall banner, painted.

164	Mrs. E. A. Easton, Milwaukee	2 00

Best mounted fire screen, painted.

245	Mrs. Mary Fitch, Sun Prairie	3 00

Best Kensington painting in oil.

259	Mrs. A. H. Foster, Milwaukee	3 00

Best velvet painting in oil.

972	Mrs. G. Rood, Stevens Point	3 00

Best painting on silk or satin.

1211	Mrs. H. M. Warner, Milwaukee	3 00

Best tapestry painting.

164	Mrs. E. A. Easton, Milwaukee	5 00

Best set architectural plans (original.)

259	Mrs. A. H. Foster, Milwaukee	5 00

Best specimen needle sewing.

259	Mrs. A. H. Foster, Milwaukee	3 00

Best painting on bolting cloth.

No. 60 Mrs. L. M. Buell, Beloit $2 00

Best painting on celluloid.

1094 Mrs. Floy Miner Trapp, Chicago..... 2 00

Special Premiums.

Wyckhoff & Co. special premium: One Perry binder, steel frame, five foot cut, value $150, for the county making the best display of field and county products, consisting of wheat, barley, oats, buckwheat, beans, potatoes, onions, carrots, cabbage, squash, beets and turnips,
Waukesha county.

Milwaukee Harvester Co. special premium: A six-foot cut steel frame harvester, value $140, for the county making the best display of field products. ..... Winnebago county.

A. E. Baker special premium: One registered Devon bull calf, value $100, to the individual or county taking the largest amount of premiums in agricultural department..... .. .. Waukesha county.

W. K. Stafford & Co. special premium: A dinner set, 154 pieces, value $60, for the best exhibit of preserved fruits and pickles put up in glass jars by the exhibitors..... 1235 Mrs. Walter Warren, Fox Lake.

J. P. Lindemann & Sons special premium: One Red Cross Magic wood range, fully mounted, nickled and trimmed, value $60, for the county making the best exhibit in class 64, household products,
968 Mrs. C. H. Root, Ripon.

Beals, Torrey & Co. special premium — One case of veal tipped boots, value $50, for the best display of field products made by any county north of the south line of Marathon county ..... Barron county.

The Milwaukee Sentinel $100 to the merchant or mercantile firm making the finest display in the Exposition hall ..... A. W. Rich & Co.

Pabst Brewing Co. special premium — For best herd of Guernseys, $100.
F. W. Tratt, Whitewater.

Chas. Cupple, $100 for the best herd of Jerseys...W. N. McConnel, Ripon.

T. A. Chapman, $100 for the best herd of Polled Angus cattle,
Leslie & Burwell, Cottage Grove.

Plankington House, $100 for the best herd of Short Horns,
Allan Varnar, Indianola, Ind.

John L. Mitchell, $100 for the best herd of Devons,
A. Baker & Son, Hustisford.

Schlitz Brewing Company special premium: $100 for the best standard bred trotting stallion and five of his get under 3 years of age,
Uihlein Bros., Milwaukee.

Geo. C. Cribb, special premium: An A grade leather top buggy, $100, for the best loaf of fruit cake made by a red haired girl under 18 years of age ..... Miss Belle Goodyear, Tomah.

Chicago Bell special premiums: A suit of clothes, value $40, for the largest steer or bull of any breed; also an overcoat, value $30, for the largest cow of any breed,
Geo. F. Davis & Co., Dyer, Ind.
Leslie & Burwell, Cottage Grove.

Domestic Sewing Machine Company, a sewing machine, list price $65, to the lady who exhibits the best sample of work done on a Domestic purchased since Jan. 1, 1890. Experts barred,
Mrs. A. L. Tenney, Hartland.

Wheeler & Wilson Company, a sewing machine, valued at $60, for the best work done on one of their machines. Experts barred,
Petley Shirt Co., Milwaukee.

Singer Sewing Machine Company, a machine, valued at $60, for the best work done on one of their machines. Experts barred,
Mrs. A. L. Tenney, Hartland.

Bunde & Upmeyer, one silver tea set and waiter, value $50, for the best collection of oil or water color paintings made by an amateur,
M. F. Hillman, Brandon.

Brand Stove Co., special premiums: A Brand Range, value $55, for the best three loaves of bread made by a woman over 18 years of age. One loaf wheat bread, one graham, one Indian,
Mrs. Tina Newton, Beaver Dam.

James Morgan special premium: One black silk dress, value $50, for the best herd of Holstein cattle..... Gillett & Son, Rosendale.

Stark Bros. Co., special premium: Brussels carpet, value $50, for best 20 lb tub of butter, made by girl under 20 years of age,
L. E. Allen, Fox Lake.

Matthews Bros. Furniture Co., special premium: A hardwood chamber set, value $50, for the best display of garden and vegetable products by one exhibitor ..... W. N. Thompson, Bay View.

Milwaukee Buggy Company, road cart, value $25, for the best and largest display of corn in the ear, seedsmen barred, W. N. Thompson, Bay View.

The J. S. Rowell Manufacturing Co., special premium: One extra fine finish 12 hoe steel bar machine, value $50, to the farmer that exhibits the best bushel of wheat, barley or oats raised from seed sown by either the Tiger seeder or drill..... ..... H. H. Greengo, Colgate.

Thos. C. Smith, a fine single harness, valued at $60, for the fastest walking horse in the harness, driven once around the track by a lady, four breaks constitute a distance.....Mrs. Mary Fitch, Sun Prairie.

Hansen's Empire Fur Factory, a fur seal coat, natural hair, value $50, for the youngest cow giving milk and having produced a calf,
Geo. F. Davis & Co., Dyer, Ind.

Clement, Williams & Co., special premium, a parlor set, value $50, for the best exhibit of fruit by a non-professional,
884, Jay S. Palmer, Baraboo.

John L. Mitchell, Jersey bull calf, value $50, for the best exhibit of American fowls..... .....J. R. Brabazon, Delavan.

John Pritzlaff Hardware Co., special premium: One set platform scales, weighing 1,200 pounds, value $50, for the best five fat hogs, judged by scale of points—age 50, weight 25, build 25,
G. W. Plank. Eyola, Minn.

C. Preusser Jewelry Co., special premium: A gold-headed cane, value $50, for the volunteer soldier who served the longest time in the late war..... ..... Capt. W. W. Jones, Madison

Stanley & Camp Co., special premium; A French marble clock, value $50, to the station agent selling the largest number of tickets to the state fair in proportion to the number of inhabitants of the town or city where the tickets are sold..... Agent at Rolling Prairie, Wis.

C. Stredy & Sons, special premium: A nickel plated imperial jewel stove, value $50, to the married or marriageable lady whose weight shall be the nearest to figures given to the president of the Wisconsin State Agricultural society in a sealed envelope by the Messrs. Stredy & Sons, prior to the opening of the state fair.

J. G. Flint & Co., special premiums: First premium, $25; second, $15; third, $10; for the three best varieties of cake,
Mrs. W. E. Swan, North Prairie,
Mrs. John Amberg, Milwaukee,
Mrs. Walter Warren, Fox Lake.

Browning, King & Co., suit and overcoat, value $40, to such husband residing in the state of Wisconsin as attended the state fair, accompanied by his wife and greatest number of children born to him during his present marriage,
Geo. Baetz and wife, Hillsburg, 11 children.

Carpeles, Hartmann & Co., special premium: An elegant trunk, value $50, for the best exhibit of factory cheese by one factory in Wisconsin,
P. Hammon, Berlin.

Bradley & Metcalf, special premium: One case of lumbermen's boots, tapped soles, value $50, for the best variety of apples raised north of the south line of Marathon county..... Clark Co.

Carpenter & Underwood Co. goods from their bakery, value $25, for the dining hall that shall serve the best meals to its patrons at same price charged at other places on the grounds.....Wauwatosa Dining Hall.

Espenhain & Bartels special premium:—A ladies' seal plush cloak, value $50, for best suit of embroidered underclothes, hand made,
Mrs. Tina Newton, Beaver Dam.

Van Brunt & Wilkins Mfg. Co. special premium: A twelve bar steel frame, steel bar, reversable tooth broadcast seeder, value $50, for the best all-purpose farm team... .....Sam Breese & Son, Waukesha.

Gale Mfg. Co. premium: One Big Injun sulky plow with rolling coulter complete, value $54, to the farmer exhibiting the best herd of Poland China swine, consisting of five head under one year old, by one sire, the same to be shown with the herd, and considered in making the award..... J. C. Love & Son, Waukesha.

John Dorsch & Sons, a potato hiller, value $15, for best exhibit of potatoes by one exhibitor, gardeners and experts barred; a No. 45 road cart, value $18, for the cow giving the greatest number of pounds of milk on Thursday of fair week,
1st, H. P. West, Fayetteville; 2d, Rust Bros. North Greenfield.

T. L. Kelley & Co. special premium: A black silk dress pattern, value $40, for the wife who visits the fair with her husband and the greatest number of children by one marriage.....Mrs. Geo. Baetz, Hillsburg.

Benjamin Young, special premium: One rubber trimmed single harness value $30.00, for the best mare and sucking colt, any breed,
George Klein, Fort Atkinson

Zimmerman Bros., special premiums: A suit of clothes, value $25.00; overcoat, value $15.00, for the best grade sucking filley, sired by full blooded sire..... .....George Klein, Fort Atkinson,

From Heyn's art embroidery department, for the best made hand knitted stockings, knit by a child not over 16 years of age, a trimmed basket stand worth $12.00 .....Cora V. Clark, Milwaukee,

From Heyn's cloak and suit department for the best patched or mended garment, a cloak or suit worth $25.00....Mrs. Tina Newton, Beaver Dam.

From Heyn's toy and fancy goods department, for the plainest and neatest dressed doll, a plush toilet set worth $10.00.....Ella Austin, Milwaukee.

O. L. Rosenkranz & Thatcher Co., special premium: One gold-headed cane, value $30.00, for the tallest and best looking man visiting the fair..... ...T. J. Birge, Horicon.

A. W. Rich & Co., special premium: A $25.00 flag of the United States, 20 feet, full standard flag bunting, regulation U. S. Army, quality and color roped, etc., ready for suspension on staff or in school room, for the best handwriting of school children under 15 years of age in any school

Cudahy Bros., special premium: $25.00 cash, for the best herd of Berkshire hogs, consisting of the best boar and four of his get, the latter to be under one year, bred and owned by exhibitor,
B. N. Cooley, Coldwater, Mich.

Gimbel Bros., one Smyrna carpet, value $25, for best sample of plain sewing, embracing the different stitches used in household sewing and repairing.....Mrs. A. H. Foster, Milwaukee.

Dewey & Davis special premium: One barrel granulated sugar, value $25, for the best exhibit of grapes by non-professional,
740, J. S. McGowan, Janesville.

Lindsay Bros. special premium: One cutter, value $25, for the best loaf of wheat graham and Indian bread made by girl under 18 years of age.... .....Miss Grace Wadsworth, Milwaukee.

A. Dahlman & Co., special premium: One barrel best granulated sugar, value $25, for the best exhibit of pears.....Geo. Jeffrey, Milwaukee.

Roundy, Peckham & Co. special premium: One barrel of best granulated sugar, value $25, for the best display of plums by non-professionals. ....J. S. Palmer, Baraboo.

Northwestern Carriage & Sleigh Co. special premium: One Big Run road cart, value $25, for the best exhibit of Victoria swine, owned and bred by one exhibitor.....J. R. Brabazon, Delavan.

R. M. Boyd, agent for Butters & Peters Salt and Lumber Co., of Ludington, Mich., special premiums: One-half ton vacuum pan dairy salt, for best tub of creamery butter (not less than 50 lbs.) salted with their salt; one-half ton vacuum pan dairy salt for best tub of dairy butter (not less than 20 lbs.) salted with their salt.

Robt. Wittke.....Beaver Dam.
L. E. Allen.....Beaver Dam.

C. E. Andrews & Co., special premiums: First premium, $10 for the best delicate cake made from Andrews' Pearl baking powder and the white of eggs for lightness and whiteness and fine grain and texture; second premium, $5 for the best cake of any kind made by any miss under 14 years of age.

Florence Weisert.....Milwaukee.
Ella Austin.....Milwaukee.

John Clark, set heavy team harness, value $25, for fastest walking span of horses once around the track in harness, weighing 2,600 pounds and upwards four breaks to constitute a distance,
Geo. H. Klein, Fort Atkinson.

Julius Lando special premium: Two pairs] gold-bowed glasses, value $20, for the couple visiting the fair who has been married the greatest number of years .....Mr. and Mrs. Horatio Nelson Joy, Milwaukee.

A. Meinecke & Son special premium: Two large easy chairs, value $20, for the largest man and woman visiting the fair.

Wm. Meyer.....Milwaukee.
Mrs. E. J. Thayer.....Milwaukee.

Goodyear Rubber Co., ladies' silk brocaded Macintosh garment, value $25, for second premium for fastest walking horse in harness driven by lady once around the track, four breaks to constitute a distance,
Mrs. Wm. Stelloh, Milwaukee.

A. G. Paddock offers special premium: One set drags, value $15, for the sow with the greatest number of sucking pigs; one gross patent tin crossline buckles for the best double harness; half a gross nickel plated crossline buckles, for the best single harness.

Davis & Benedict.....Milwaukee.
Thos. C. Smith & Co.....Milwaukee.

O. G. Stowell: A. No. 1 tank heater, value $20, for the best tub of butter made by girl under 18 years of age.....L. E. Allen, Beaver Dam.

Milwaukee Hay Tool Co.: Two sets reversible hay carriers, harpoon fork, pulleys, etc., complete except ropes, for the best pen of American Merino sheep; one set for best pen Shropshire sheep.....R. H. Mill, Palmyra.

Cornish, Curtis & Greene, Fort Atkinson, Wis., for best tub creamery butter, colored with Thatcher's Orange Butter Color, one Mason power butter worker, worth $50; for the best tub of farm-made butter, colored with Thatcher's Orange Butter Color, one No. 43 rectangular churn, worth $10.

Robt. Wittke .....Beaver Dam.

Kate F. Peffer.....Pewaukee.

STATE FAIR OF 1890.

OPENING ADDRESS.

By Pres. John L. Mitchell.

Members of the State Agricultural Society, Fellow Citizens:

It is my official duty to welcome you to the annual fair of the Wisconsin State Agricultural Society, an exhibition which you will find complete in all its details and superior as a whole, I feel safe in saying, to any of its predecessors. This result is due to the labors of our secretary, Mr. Newton, and to the growing interest taken in the affairs of the society.

You are presumably an assemblage of farmers. In casting about for an appropriate subject to address you upon I discover that most agricultural topics are somewhat worn—the question of field crops has been winnowed infinitesimally fine—the stock-barn has been ransacked from root-cellar to roof-tree. There is, however, one department of agriculture, or rather aquaculture, which seems to have received little attention. I refer to the harvest of the waters.

A glance at the map of Wisconsin, will convince anyone of its varied, and extensive water resources and consequent piscicultural advantages. The state is bounded on the west by the Mississippi, with its important tributaries. On the east stretches Lake Michigan, in whose depths feed the white-fish—most delicately flavored of all fishes. To the north spreads a network of crystal streams in whose cool currents sport the speckled trout. Southward, the map is dotted, thick as stars in the milky way, with little lakes—breeding ground for pickerel, pike, blackbass and the urchins delight, the sun fish. On all these finny tribes, anglers with

the rod and fishers with the sein, in daily increasing numbers, are waging war without truce. To make good the deficiency caused by this destruction the state fish-hatchery has been exerting itself of late years. Mr. Nevins, the superintendent, informs me that he has shipped the past season of brook trout fry 3,320,000 to 300 applicants, of rainbow trout 3,445,000 to 225 applicants, of wall-eyed pike 25,000,000 to 112 applicants. In Lake Michigan, Lake Superior and Green Bay 30,000,000 white fish fry have been liberated In addition 27,472,500 impregnated lake trout eggs have been planted at various points along the shores of Green Bay and Lake Michigan.

To bring this matter home, nearly every farm has its pond where german carp would thrive, or an overflowing brook where trout might be reared. While these properties remain uncultivated they raise nothing but "frogs and taxes." Utilized pisciculturally, they would help to vary the farmer's too monotonous diet, they would furnish a pastime for the boys, and keep them out of mischief. Finally, if summer boarders are desired there is nothing so likely to catch them as a fish-hook.

The german carp can be obtained from the state hatchery in the fall and the trout in early spring.

The fish raising question is of some moment. I recommend its serious consideration by those having water facilities.

A few words concerning the future of the Agricultural Society. Under the present lease there will be but one more fair held on these grounds. Thereafter, unless a new and permanent abiding place is secured for it, the fair will once more become a wanderer. Some people doubt the policy of permanently locating our exhibitions. But the weight of opinion is decidedly in favor of fixing the fair for all time at a point of easy access from the whole of the state, and near a city having sufficient accommodation for the transient multitude. The only spot that fills these conditions is Milwaukee. The friends of the Agricultural Society in this vicinity and throughout the state should see to it that the legislature of next winter make an adequate appropria-

tion for the purchase of grounds near Milwaukee and the erection of suitable buildings thereon. Our legislators can well afford to be generous in all things that advance the interests of agriculture. Whoever extends a helping hand to agriculture becomes helpful in perpetuity. When Wisconsin shall have been shorn of its forests and its mines deserted, still will the grass grow tall in its meadows—still will the hum of the reapers be heard in its fields.

There is another exhibition—of wider scope and intenser competition than the present one—where the people of this state, are expected to make a creditable showing, namely, The World's Columbian Fair, to be held at Chicago in the year 1893. On that occasion every state in the Union will wheel into line animated by a patriotic enthusiasm. Wisconsin, I am certain, will keep step with the best of them. Our exhibit in the nature of things, is not likely to be sensational. It will be substantial. Our wheat and cattle, our hams and cheeses may look common place along side of the high art of Europe, of the ingenious carvings of Japan, of the gorgeous stuffs of the orient. But these things are merely the toys of an idle hour. Whereas our products are essential to the comfort, to the physical well-being of mankind.

I now declare the exhibition open to the public.

REPORTS OF SUPERINTENDENTS.

DEPARTMENT A.

One of the strongest evidences of the need of permanent fair grounds, and as a result permanent stables, is the unwillingness of owners of good stock to exhibit in the indifferent quarters furnished on the Cold Spring grounds.

These men are not to be blamed for hesitating to risk valuable animals, in stables that under no other circumstances they would think of occupying.

The exhibit in this department though small was fine in character, and well distributed among the various classes.

A few of our local breeders and stock men can always be depended upon, through loyalty to our home fair to make an exhibit of their stock and save us from failure.

Prominent among these at the fair of 1890, were:

Capt F. Pabst, Milwaukee.

Hon. R. B. Kellogg, Green Bay.

H. A. Briggs, Elkhorn.

Felland Bros. Madison.

N. W. Morley, Baraboo.

All exhibitors of Percherons.

Geo. Klein, Ft. Atkinson.

Reed Bros., Janesville.

Eli Perry, Waupun.

Showed, British drafts.

Uihlein Bros., Roadsters.

The premiums were awarded by:

Griffith Richards, Cambria—British drafts.

H. B. Sherman, Burnett Junction—Percherons.

L. Downs, Allens Grove—Roadsters.

I would suggest that at the next fair the judges be required to name 1st, 2d, and 3d best animals in each class in

his department, and that the third selection be entitled "commended," and given a white ribbon. I think the classification in this department is broad, and fully satisfactory to exhibitors, unless a separate class be given Suffolk Punch. Horses.

Respectfully submitted,

JOHN M. TRUE.
Superintendent.

SPEED DEPARTMENT.

Entrance money in Speed Department	$3,050 00
Stall rents	132 00
Amphitheatre	1,292 75
Total	$4,474 75
Paid in purses	3,950 00
Balance	$524 75

DEPARTMENT B.

To the Executive Board of the Wisconsin State Agricultural Society:

Galesville, Wis., June 15, 1891.

GENTLEMEN—The show of cattle at the state fair, in the year 1890, was one of the best in the history of our society. Three hundred and fifty-nine head were on exhibition and all the popular breeds represented, of this large number there were but few cattle that did not do credit to their owners, and their breed. The following is a list of the owners, and the number of cattle entered or on exhibition:

Leslie & Burwell, Polled Angus, Cottage Grove, Wis	20
T. Hacker, Guernseys, Cottage Grove, Wis	10
A. E. Baker, of Beaver Dam, Wis., Devons	10
P. W. Richmond, of Columbus, Wis., Galloways	9
Cosgrove Cattle Co., Le Sueur, Minn., Herefords	16
Thos. Clark, Beecher, Ill., Herefords	9
Allen Varner & Son, Indianolla, Ill., Short-horns	10
E. L. Rawsen, Oak Creek, Wis., Devons	15
J. W. Martin, Richland City, Polled Norfolk	11
Morse & Sons, Verona, Wis., Devons	12
Wm. McConnel, of Ripon, Wis., Jerseys	15

J. J. Williams, of Berlin, Wis., Herefords	15
Gillett & Sons, of Rosendale, Wis., Holsteines	16
Rust Bros., of North Greenfield, Wis., Holsteines	17
J. W. Morse, of Verona, Wis., Devons	13
C. N. Sanger, Waukesha, Wis., Short-horns	16
Henry Stelloh, 733 National Ave., Milwaukee, Holsteines	8
C. N. Griffith of Whitewater, Wis., Jerseys	14
F. D. Hinkley, of Milwaukee, Wis., Jerseys	14
F. W. Tratt, of Whitewater, Wis., Guernseys	20
R. S. Kingman, of Sparta, Wis., Jerseys	14
G. W. Burchard, of Ft. Atkinson, Wis., Jerseys	11
J. C. Smith, of Whitewater, Wis., Jerseys	12
Lefebre & Johnston, North Greenfield, Wis., Jerseys	28

Very truly yours,

ALEX. A. ARNOLD,

Superintendent.

DEPARTMENT C.

Mr. President, and Gentlemen of the Board:

I am gratified to be able to report another very creditable exhibit in Department C, (sheep).

There were on exhibition two hundred and thirty-nine sheep, consisting of forty-two Oxfords, eighty Shropshires, twenty-nine South Downs, thirty-seven Cotswolds, forty-three Merinos, eight Horned Dorsets, and seventeen sheep that were entered as Hampshire Downs. At the Fat Stock Show, Chicago, the same sheep were entered as Oxfords.

I would advise dropping the last two classes (Hampshire Downs and Horned Dorsets), from the premium list. I think the want which the Hampshire Downs are represented to supply, is already provided for by the other established families of Downs.

If the Horned Dorsets have any merits worthy of recognition, they failed to impress them upon observers. I would advise applying the money, given to these classes, to an increase, and adding a third premium to the other classes.

The judging and other work of the department was satisfactory, so far as came to my knowledge. I would advise a continuance of the same plan for the future.

Respectfully,

C. M. CLARK, *Superintendent.*

DEPARTMENT D.

To the Honorable Board of the State Agricultural Society:

GENTLEMEN:— Your superintendent of Department D (swine), begs leave to report that the exhibition of swine was a success in every respect, both in quantity and quality of animals exhibited.

For two days we were building new pens for the late arrivals, and finally accommodated one large, fine herd in the cattle stalls.

The principal exhibitors were:

In Poland China: Geo. A. Lyttel, Elkhorn, Wis.; James E. Welsh, Waukesha, Wis.; I. C. Love & Son, Waukesha, Wis.; I. Weggie, Burlington, Wis.; G. W. Plank, Eyota, Minn.; H. N. Maxham, Diamond Lake, Ill.

In Chester Whites: — Palmer & Noblett, Springfield, Wis.; I. B. Barker & Son, Millard, Wis.

In Victorias and Berkshires.—Davis & Benedict; J. R. Brabazon, Delavan, Wis.; M. H. Walworth, Hillsdale, Mich.; B. N. Cooley, Coldwater, Mich.; Charles P. Hill, Brookfield, Wis.

In Cheshires. — Geo. McKerrow, Sussex, Wis.

Respectfully submitted,

EPH. BEAUMONT,
Superintendent.

DEPARTMENT E.

The exhibit of poultry at the state fair of 1890, was very large and fine. Standard breeds and new varieties were well represented. Many fine birds were moulting and so appeared at a disadvantage.

Owing to the limited space of the building, visitors found it very disagreeable and difficult inspecting the exhibits, and only a small number of fowls had a fair show. The judges were also greatly inconvenienced and delayed in moving about. Some of the coops were so high as to be accessible only with a ladder. I would therefore recom-

mend that a large tent be put up for the accommodation of the water fowls at the next fair. The limited number of premiums offered, greatly decreases the number of exhibits, and as the aim is to have as large and fine exhibits as possible, I would urge that more space be given to this department and breeders be encouraged to exhibit by liberal and numerous premiums. Every variety included in the American standard of excellence of poultry should be represented on the premium list. I submit a plan and a few specifications for a permanent building which I hope will be considered.

Although this plan is not as elaborate as many poultry men would desire, I think they will find it very satisfactory. The building itself can be put up for a moderate sum, as its dimensions make the constructions simple. I think it would be more convenient to have two buildings 200 feet long, than one building 400 feet long. And to have the coops uniform will require two buildings.

Care should be taken to have it tight, as most of the fowls on exhibition are in such a condition as to be extremely sensitive to draughts. Doors should be provided as shown in diagram, which may be opened on hot days.

Although poultry raising is greater than the cattle industry, it has received a very small allowance at our fairs, while the cattle division has been liberally dealt with. The great interest shown in poultry by visitors at the fair and the large number of persons who visit this department shows that it is a valuable part of the exhibition. As more persons are interested in poultry than in any other department of the fair, it would seem that this department deserves a liberal allowance. A fine and impressive appearance requires a uniform series of permanent coops.

It is easily seen that the proper way is to have an extended line of coops with a narrow passage, rather than to "huddle" the coops and have a wide passage. The passages between the coops and the sides of the building are designed for the conveninece of the judges, exhibitors, and persons who may wish to converse with exhibitors. The judges have always been greatly hampered and delayed in their work with the present arrangement. With

this plan judging can be carried on unhampered. Exhibitors can feed and care for their fouls without inconvenience to themselves or visitors. They can also carry on conversation with each other and others, without blocking the main passages. Persons will also know where to find breeders without trouble. Windows just back of the coops will give light where it is most needed. Without permament coops a complete classification cannot be attempted, as the coops of exhibitors are of such various sizes, shapes and constructions. Wire netting is preferable to rods, as it offers a less obstructed view and is much cheaper. Cloth is preferable to wood for partitions as it "shows off" the chickens better, is less expensive and more convenient.

REUBEN M. STRONG,
Asst. Supt. Poultry Dept.

DEPARTMENT F.

To the Executive Board of the State Agricultural Society:

The exhibition of field and garden products at the fair of 1890 was creditable throughout. As to quality and number of exhibits, the display was equal to the average of former exhibits in this department.

The display of dairy products was very much larger, and in the opinion of many, was better than any other exhibit that has been made for many years. It is to be regretted that the facilities for a proper display of the products of this branch are so inadequate. It is hoped, however, that ample accommodations for this display in a separate building may be provided in the near future. Such a building, when complete, should be sufficient to accommodate not only the dairy products, but as well all dairy working machinery. At the last fair we were compelled to send a very large and attractive display of these implements to the machinery department. This was exceedingly unsatisfactory to all the exhibitors. They desired to display their goods in the same hall with the dairy products. For obvi-

ous reasons such an arrangement would be desirable; but, owing to lack of room, was absolutely impossible.

The premiums heretofore offered seemed to be sufficient to attract a satisfactory display, and no changes are recommended in the premium list for the next fair.

The exhibit of dairy products at the fair of 1890 was very creditable. In 1889 there were fifteen entries of cheese and thirty-five entries of butter. In 1890, last year, there were fifty-two entries cheese and forty-eight entries of butter. There was a large display of cheese; the three varieties, Cheddars, Flats and Young Americas, were well represented. Although a liberal premium was offered for Swiss cheese, am sorry to say there were no entries made. The display of butter was not as large as it should have been; yet, when we consider the poor facilities we have for taking care and showing butter, I am not surprised. Many manufacturers who would have been glad to make an exhibit refused to do so for fear their product would be damaged from exposure. I hope the time will soon come when the society can afford to provide a suitable place to exhibit butter. The judges, Messrs. B. J. Johnson, A. V. Bishop and F. Grossenbach, on cheese, J. R. Godfrey, Chas. A. Schmidt and Mr. Holmes, on butter, are deserving of great credit for their patience and good work.

Respectfully submitted,

H. K. LOOMIS,

Superintendent Dairy Department.

DEPARTMENT G.

To the Officers and Executive Board of the Wisconsin State Agricultural Society:

GENTLEMEN: As superintendent department G, fruits and flowers, my report will be very brief, for in this department there were fewer entries than in many preceding years. This though was not owing to a just appreciation

of the fair management, but simply the lack of fruit to exhibit.

The year 1890 may be set down as one of universal shortage in the apple crop. But short as it was reports from other states show that, with the exception of California, Oregon and Missouri, Wisconsin stands pre-eminent in the apple crop for 1890. But while this is true of our state only favored localities produced good crops, consequently there were only a few who made entries in class G.

The fruit, however, on exhibition was of excellent quality and the show better than visitors expected.

In grapes the exhibitors made a better display than was ever seen at previous fairs, one exhibitor showing over thirty varieties of good table grapes, showing very conclusively that Wisconsin can claim the honor of being counted as the best western state for producing this most valuable fruit.

The display of flowers and green house plants by Currie Brothers, of Milwaukee, and Mr. Ringrose, of Wauwatosa, were very fine indeed, not only showing cultivated taste and artistic skill in making the display, but also showing the development of this industry in and near our own metropolis, I need not speak of the very poor accommodation which the hall affords for making an exhibit of the character alluded to; therefore, much credit is due these gentlemen for making so good a show under adverse circumstances.

There are some points in the premium list for this department which could be amended and the amounts increased where large displays are called for.

To the exhibitors and to the fair management my thanks are due for their kind and courteous treatment, which, in this as in all other departments, made our fair of 1890 a signal success.

Respectfully submitted,

B. S. HOXIE,
Superintendent Department.

DEPARTMENT H.

To the Officers and the Executive Board of the State Agricultural Society:

GENTLEMEN: — The exhibits in the machinery department, at the fair of 1890, were larger than in any previous year. The number of entries were 738, and the number of exhibitors 124.

The grounds which formerly accommodated this department were not sufficient. I had to lay out two more blocks and we were still crowded for room. The machinery for the manufacture of dairy products was assigned to my department, crowding me, and unsatisfactory to them as to accommodations.

I recommend that a tent, or some other arrangement, be provided for this class of exhibitors at the fair, this fall. I also recommend that the entries made in this department, last fall, be printed in our report, giving name of exhibitor and exhibit.

Respectfully submitted,

A. W. VAUGHAN,

Superintendent of Department H.

DEPARTMENT I.

To the Executive Board of the Wisconsin State Agricultural Society:

GENTLEMEN: — The exhibit in the manufacturers department, at the fair of 1890, was unusually large. The thrifty merchants and manufacturers, of Milwaukee and other parts of the state, took hold in earnest, to make this department one of the attractive features of the exhibition, filling all the space that could be allotted us in the building and three large tents outside. We think the exhibitors in this department deserve much credit for the good feeling manifested, in accepting, in many instances, one half the space desired, in order to make room for other exhibitors.

Hoping and trusting that the time was not far distant, when there would be ample room provided for all, I would recommend that the board furnish three good tents, at least 60 x 80 feet each, for the use of this department at the coming fair. And at the proper time will be pleased to suggest, for your consideration, a few changes in the premium list, keeping in line with the new styles of manufacturing, not increasing the cash premiums of the present list.

Respectfully submitted,

H. D. HITT,

Superintendent.

DEPARTMENT K.

To the Executive Board of the Wisconsin State Agricultural Society:

GENTLEMEN: There were three exhibits of sewing machines in the fine art department. The display made by the White Sewing Machine Co. was elaborate and a marked feature of the department.

The exhibit of pictures of all kinds was the largest ever known in the history of the society. The space assigned was entirely inadequate and this portion of the exhibit was scattered through four departments. This made difficult work for the judges and gave great annoyance to the exhibitors. The hall is so constructed that the entire display of paintings was necessarily shown in a defective light. Sewing machines should be entered in the machinery department and the space they now occupy devoted to the art exhibit. Sky-lights could be put in the roof at small expense and give this department more the appearance of an art gallery and less that of a dungeon.

The premium list should be changed and an additional class made for amateur artisits. With the present classifi-

cation professional artists take most of the premiums, and amateurs who take equal pains to help our exhibition receive small rewards. I would recommend this change to your consideration and also an additional appropriation of one hundred dollars to the department to make it effective.

H. C. ADAMS,
Superintendent of Fine Art Department.

DEPARTMENT L—WOMAN'S WORK.

To the Executive Board of the Wisconsin State Agricultural Society:

GENTLEMEN:—Although this is the first year this department has existed independently, it was previously, generally, conceded that it had fairly earned the right to an existence independent of other departments.

The exhibit in this department was unusually large and fine.

The effort made by the secretary to secure a large exhibit, by offering extra inducements by way of special premiums, was a decided success, and resulted in a larger exhibit than was ever before made.

It was thought advisable, by the committee having in charge the revision of the premium list, to strike out Class 65, Works of Art; by so doing we were enabled to extend the list of articles in other classes. About $35 was taken from this department and turned over to Department K—Works of Art.

It has always been a cause for regret that a less number of second premiums are offered in this department than in any other, and therefore, I ask that you will consider the propriety of appropriating the sum of fifty dollars to be used for second premiums.

About twenty dollars is annually paid for the rental of show-cases for Class 68. A permanent cupboard with glass doors could be made for that amount that would be much more convenient and attractive for the display of those goods and would be an item of economy to the society as well.

Not a little annoyance and confusion is experienced from the entry tags now used for canned goods; they are not adapted to that kind of goods and frequently become displaced, or lost, and articles cannot be judged because it is impossible to know to what entry number premiums should be accredited. I would suggest, instead of tags provided with wire for fastening, that gummed tags be furnished for all canned goods.

In conclusion I desire to express my cordial appreciation of the many courtesies extended and aid rendered to me by Superintendents Hill, Adams and Hoxie, who did much to relieve the heavy burden of the unusually large exhibit in my department.

Respectfully submitted,

VIE H. CAMPBELL,

Superintendent Woman's Work.

FORAGE DEPARTMENT.

Mr. President, Gentlemen of the Board:

At the Wisconsin State Fair, held at Milwaukee, from September 15 to 20, 1890.

The amount of hay and straw used in the forage department was 98 tons, 1,900 pounds.

Of this, 57 tons 130 pounds was hay used as follows:

Twenty-eight tons, 600 pounds used in the cattle department.

Twenty-five tons, 410 pounds used in the horse department.

Three tons, 1,120 pounds used in the sheep department.

The total costing $474.57; averaging $8.19 per ton.

The amount of straw used, 40 tons, 1,770 pounds, costing $272.60, averaging $6.51 per ton.

Twenty-one tons, 565 pounds used in the horse department, costing $7.00 per ten, or $148.97; and the balance, 20 tons, 1,210 pounds used in the cattle, sheep and swine departments, costing $6.00 per ton, or $123.63.

The sum total paid for forage is $747.17.

Respectfully submitted,

C. T. FISHER,

Superintendent of Forage Dept.

PROCEEDINGS

OF THE

State Agricultural Convention.

OPENING ADDRESS OF THE CONVENTION OF STATE AGRICULTURAL SOCIETY.

By President A. C. Parkinson.

Ladies and Gentlemen, and Members of the Convention: I shall offer no apology in departing from the accepted custom of the occasion, to invite your attention to a very brief consideration of a single thought touching the political duty of the farmer.

The relationship between the state and the citizen is a reciprocal one. In it is involved a duality of interest. The state's chief aim and purpose is the protection of its people. In turn every man, but much more our intelligent farmer, owes the state that watchful and continuous service he would give to his own private business. Next to the relation of man to his Maker and his family, no question is of greater vital importance than his relation to the state. It covers a wide range in this world's humanities and comprehends nearly all the phases of sociology.

We hold that every man, but much more our farmer, and wage-earner, should be a politician. The term we use, of course, in its broader and better signification, and yet we do not mean that our farmer and laborer should eschew practical politics.

After all, the picture we are continually having drawn before our eyes may not be an exaggeration, but when shall we see better things? Not so long as the intelligent

yeomanry of the nation are indifferent to national duties; not so long as they are indifferent to that political degradation they so loudly deplore; not so long as words pass for deeds; "not so long as the echo of reform is accepted for reform itself." Deliver us from a numerous class of politically indifferent citizens. We would prefer to see the farmers of Wisconsin perniciously wrong half the time in their political action than to see them wholly inactive and indifferent. Our farmer class are the most gullible people under the sun. For years they have been the easy prey of political sharks and freebooters. In every political campaign they seem to get elevated into a sort of beatitude begotten of the cajolery of party platforms and stump-speeches, from which condition they do not descend till next tax paying time. Having the numerical strength, they have it within their power to shape legislation fairly in their interest, but nine-tenths of all our legislation is proposed and passed in the interest of and for the protection of the aggregated wealth of the state.

Place forty farmers and three railway attorneys in a hall together for the purpose of selecting three delegates to a nominating convention, and you can safely gamble that the three lawyers will go as delegates to the convention, while the forty farmers go home pouting about the corruptions and trickeries of politics. So in the legislative halls there seems to be the same utter want of co-operation and self-assertion.

We conceive it to be wisdom for every intelligent farmer to connect himself with some recognized political organization. In these days of loose party ties we know a sort of glamour has been thrown about the man of independent politics. But it is seldom that a man even of transcendent ability can maintain an independent attitude without loss of influence. He is apt to be regarded in public estimation, as a sort of political nondescript, a chieftain without warriors, a leader without command, a man whose ability is unknown, whose influence is unsought. However we would not discourage the most perfect liberty in the abandonment of parties. That is a sacred privilege and infre-

quently, though less frequently than many suppose, becomes an imperative duty.

Our quarrel with the farmer is not so much on account of his adherence to party, as that while claiming allegiance to some party, he has so little to say in controlling the action of that party. The special business of our farmer is actual participation in politics. But I hear some of you say: "That is correct theory, but there is no encouragement for us to enter into politics since the field is pre-occupied by place hunters, ward bummers and demagogues."

More is the reason why it becomes your duty to go into politics. The financial interest and domestic security of every intelligent citizen demand this service, this eternal vigilance.

We are now well out of that chanceful and sentimental period of our politics, such as was naturally induced by the war; and our people are now summoned to a conflict less sanguinary but scarcely less vital. With that, emotion impelled the masses; with this, a thoughtful and earnest leadership is indispensable. War at best is scarcely more than a stupendous trial of physical strength and endurance. Seasons of violent passions are rarely seasons of reflection. To adjust a tariff to the wants of the government and the masses; to right the wrongs of our financial systems; to effect harmony and co-operation between warring capital and labor; to avert the evils incident to the enormous aggregations of wealth in the hands of the few; these are some of the knottier problems which only the honest thought and patriotism of the republic can rescue from further complication and confusion.

The proper settlement of these questions is of greater vital importance to the farmers of America than to any other, or all other classes. Upon it depends their future security, peace and happiness, in a word, their very liberty itself. That proper adjustment depends upon the cultivated brains, the solid judgment, the brave hearts of the land-workers of America.

Preparation to meet this great exigency is the supreme duty of the hour. "Know your rights and knowing dare

maintain." Insist first of all upon being heard in the councils of your party. Send your Clinton Babbits, your John M. Trues, your Alexander Arnolds, your Nicholas Fratts to congress now and then. There is sore need of them there. Send men who have touched elbows with the toiling millions and are in sympathy with them. Not ignoring the drudgery of politics, look up to the more cavalier functions of command. Don't be lulled into inaction by the flatteries of party platforms. Insist on performance as well as promises. You have been soothed to sleep quite too often by the lullaby of the "honest farmer."

The problem confessedly of greatest magnitude confronting the farmers and wage-earners of the nation is how best to mitigate the evils and avert the dangers of vast accumulations of capital, bulwarked behind legal enactments and chartered privileges.

Adam Smith has told us, in his good book, that there is no natural antagonism between labor and capital; that their interests are identical; that they are partners in every enterprise. We shall not presume to attack this beautiful theory, venerable with age and maintained by all the modern schools of philosophy, except to say that in our humble judgment, the partnership business in this country has been simply a freeze-out and degradation of labor. The Adam Smith teachings offer no practical rules, since they imply the total elimination of human selfishness as an element in human conduct. Under the partnership theory during the last thirty years, one-half of the wealth of the United States, we are told, has practically passed into the hands of less than 40,000 persons, and now we are confronted with a horribe condition as the result of a charming theory. Unless arrested in their pursuit of greed by wholesome legislation, less than 10,000 persons will own and control more than half the wealth of the nation within the next quarter of a century.

Already the money barons of the nation are seeking investment in other fields than those hitherto held and we may now see the beginning of an era of immense landed estates in America, which must end at last in that hope-

less condition of landlordship and tenantry under which unhappy Ireland languishes and starves to-day.

My friends, there has already been born into this new world of ours, the idea that the time has come when ownership in our lands should be limited by law to moderate holdings, and to our own people. This thought we know is not the accepted one of our colleges and universities, but really what is there very new or startling in the suggestion? It is the same idea that lies at the bottom of all our homestead and pre-emption laws. We have no disposition to chase down the thought, but it does seem to us no question can be named of deeper concern than that of preserving the lands of the nation in fee simple in moderate holdings to the nation's people. In very spite of us the billionaire may come, but our land-owning farmers must never be permitted to go. I am not an alarmist, but, farmers of Wisconsin, you are confronted with these grave questions. If you would preserve your inheritance to your children and their children, duty bids you prepare to meet them now. How idle then the claim, that there are now no great and vital issues; equally foolish the intimation that the toiling millions are without hope. The statesmen of all parties are only too eager to serve your cause. Proclaim the just tenants of your faith and your purpose to maintain them, and the creeds of all parties will speedily embody them.

A new phase has arisen in political affairs, recently, which means, it is thought by many, the formation of another party, and the consequent re-adjustment of existing party lines, possibly the dismemberment of one or both the old parties. Possibly we are over sanguine in our hopes of reform through existing party organizations; but it does seem as if the half had not yet been tried. Old parties are not easily destroyed; you know that new ones are not readily organized for effective purposes. The past proves it and the future will show it. Then why should the seven million of farmers seek to form a new party of their own when they now have it in their power to control both the old parties. Such a movement would only still further di-

vide and distract, for many who are now your friends would still adhere, for manifold reasons, to the old party.

Time was when a majority of both houses of congress was composed of farmers. Now, in the two houses it is difficult to find enough to make up a committee on agriculture. There ought to be an awakening of public spirit in the direction we have indicated, or else less of these complainings about loss of influence. Seek then, to restore the old order of things when the legislation of the country was chiefly shaped by your hands. Your occupation is one of the highest dignity, greatest utility, gravest responsibilities, and sublimest possibilities. Then wear the badge of your brotherhood where it can be seen of all men. Upbraid your own short-comings, if need be, but extol always your high calling. Honor your profession. If you do not respect it, all the world else will join you in despising it and casting it into disrepute.

The President—Ladies and Gentlemen: I have the honor to present the governor of Wisconsin, His Excellency, Geo. W. Peck.

Gov. Peck—*Mr. Chairman, and Gentlemen of the State Agricultural Society:* I presume that my invitation to address you was more owing to the position that I have been lately called to fill, than from any expectation that you would receive from me any instruction; knowing, as you do, that I am not so well posted in matters in which you are interested, as you are.

All subjects that one can speak upon, political, religious, agricultural, almost every subject is loaded, and politicians are very careful not to touch upon them. It has occurred to me that the most harmless subject that I could select on this occasion, would be to say a few words to you in reference to The Boy on the Farm, and contrast the boy of forty years ago with the boy of to-day.

Forty years ago the farm was a small institution, very little cultivated, and with very few buildings. The farmer

on one occasion of which I have knowledge, went down into the field about time for supper, and told the hired man to unhitch the horse from the plow and hurry to town for the doctor. The hired man unhitched the horse, left the head-stall and the hames on, and rode twelve miles to town, He did not get back until near morning, and the doctor got there sooner, and while the hired man was preparing to bury the horse he had killed by the long ride, the old farmer came down and says, "Got a boy up to the house."

The first years of the boy's life upon the farm he is not cared for particularly by anybody; nobody can remember what becomes of the boy the first six years; he gets around to the table about meal time frequently, and he plays as much as possible, and nobody cares what becomes of him. After he gets eight or nine years old he comes home with his shirt damp, and his hair dried out by pounding it with a stick, shirt wrong side out, and the farmer asks where he has been. He says he has been after hickory nuts, and the farmer whips him for having been in swimming. The boy gets whipped real regular — used to, I know. He can break a leg about once in eight or nine months by climbing trees after squirrels, and it costs a good deal to raise him. He will cut off a toe in trying to hoe potatoes when he is barefoot, and be laid up with that. He will get around a corn-sheller and lose a finger or two, and then he is always crippled, and never can draw a pension. The boy of that early day grew up almost a cripple; there was not much of him left except days' work, and he worked after he got big enough. He begins by running errands, and there are more errands that that boy has to run on than anything in the world. He can do more labor in twenty-three hours and a half than the farmer, his wife and daughter and three hired men, and when he says he is tired, they ask him, "Why don't you go to bed?"

The trying time with this boy of years ago was when they told him he would have to teach the calf how to drink milk. That has to be done on a farm, and you can't expect a man who is paid $30 a month and board, is going to do those small things, and so the boy has to do it, and it is a

terrible strain on the boy, if it is a good sized calf. But after a few days' work the boy can convince the ugliest calf upon the face of the earth, (either Jersey or otherwise), that there is only one true way to get sustenance, and that is out of the bottom of a tin pail. The calf will snort the milk up the boy's sleeve for a number of times, and the boy would have to go through a clothes wringer and dry himself if he cared for his appearance, but he gets there, and the calf knows from that hour that the calf has got to attend to its own business.

The boy has to sleep in the garret with the seed corn and walnuts and butternuts. Many of you gentlemen have slept in the attic, and instead of having beautiful pictures on the walls you have seen these strings of seed corn hanging there, and you have thought they were the most beautiful picture that you ever saw, and to-day many of you will look back — after looking at pictures that costs thousands of dollars — and think of the seed corn in the garret; and then you will remember the butternuts, with the shells off, how uncomfortable they were to a boy when he stepped on them in the dark and rolled them across the floor and fell down. That is what the boy had to contend with in the early day. And then he had to go to school when he could not go anywhere else; when it got so cold that the boy would hate to go outdoors, he would be given a spelling book — and you know where the school house was, a mile from the farm, on the coldest gravel knoll that ever was made. Strange how they always got the school-house there. *But the boy stood by it.* He stood on the south side of it and got warm when there was not any fire inside. You remember there was always a graveyard right near the school-house — the most cheerful place in the world for a boy to get an education. The farmers did not visit the school to see if the children were being well taken care of; the only thing they did was to haul a jag of knotty wood there, and lay it off on the north side of the school-house, where it was the coldest, and the boy would have to chop it and bring it in. Once in a while the farmer would come and fetch the teacher home when it was so

cold she could not walk, and he boarded her. When the boy got too big to go to school he wanted to go to town and drive a 'bus, do anything but stay around the farm. His toes were off, fingers off, ears frozen so they were ready to come off, and not very well himself; he would see how those town boys had a picnic all the time, and he wanted to go to town; no matter what he did, he would go and help a boy loaf, or anything, just to get away from the farm.

Then the boy would get in love. Don't seem as if a boy could under those circumstances; but lots of you have got in love in the most unexpected manner. Nobody would expect that a fellow in his condition could. And after a while the farmer would let him drive one of the horses, when it was not in use, to the old buggy, and he would go off somewhere to a Fourth of July, or go to a fair or a circus. Gentlemen, there are many of you, if you stop and think of the canvas tent, and the elephant, and the red lemonade, you can actually see and smell them now. That was all a boy had for recreation, was to go to a Fourth of July or circus once in a while. He enjoyed himself, and to-day some of these golden farmers, worth over half a million — I see one of them right here now — would give more to go to an old fashioned Maybie circus — I say Maybie because they are all dead, and I cannot be accused of advertising them — than they would to take a trip to Europe.

The boy would work in haying time and make the scythe move like an old person. Then he would rake the hay into windrows, with some hay and some rattlesnakes; but he got out of the way of the rattlesnake. He would carry the jug into the field — I don't know as they have one now, but they used to carry a jug into the hay field — and put it under a cool tree, and get around there real frequent; and the boy was always there when they got around. At seventeen or eighteen, this boy of so many years ago, would go off to a 4th of July celebration, with a girl that had come from an adjoining place — would be called a hired girl now, but she was not; she was the daughter of another farmer, who came over to help the boy's mother while she was enjoying the fever and ague. The boy would go off

to a 4th of July celebration, and not come home until eight or nine o'clock in the morning, and he would go to his mother, who had just got over the shakes, and say: "We are married. We concluded there was no use living this way any longer, so we got married." You would not think a boy, under those circumstances, would want to get married; but they settled down on the old farm, in the south lot, left by the father, some years ago, and became happy as anybody could be under those circumstances, and they lived long and raised a family.

And now I will speak of some of the family that they raised. You will see now there are different methods. The boy, now, has a reasonably easy time. If he has to work in the field, he can ride. It would have made that other boy sick to ride a plow, or a drag, or a cultivator, or a reaper. That boy way back, if anybody had told him about the reaper of nowadays, he would have killed somebody. But the boy now lets the hired man do more work, so does the father. I know it by lots of men I see here to-day; the hired man is doing more work than the boys, a great deal, and the boy is making more money than the father before him did, and working much less. The boy of to-day is different from the boy of twenty-five and thirty years ago, from the fact that I am told the little school house, that was so sad years ago — I am told this; I have not been around the country districts much — is in the brightest spot upon the face of nature now. It is painted; there are flags waving upon the school house; the books are the best that can be procured. The seats, instead of being the old, whittled benches — and every boy's name is on an old bench some where — are the most interesting and easy that can be procured, and the desks are perfect, and the teachers are the best that money can secure, and the boy is getting an education.

He goes to school, now, I am told, in the summer. The school-house is not upon the gravel knoll, I hear, beside the graveyard, but down in a valley, surrounded by trees. There is a library in the school-house, and instead of boys having to be driven to school, they like to go there, and in-

vite their friends to come and see them at school. And the farmers, I hear, may often be seen about the school-house, talking about the progress the children are making, and everything is lovely and smooth where it used to be hard, very. And the boy now, I find him not ashamed of the horny hand of his father, because he himself is in the university. The dude imitates the farmer's boy in all his strength and all his greatness, he tries to be even stronger in the arm and limb, to run faster, to row boats faster; he is imitating the farmer's boy. The farmer's boy, if he is in Yale, is at the head of his class, also the leader of the athletes in the gymnasium, in the boat race. He is at the head, and everybody will say the boy is from such a farm, instead of saying as years ago, "He is a farmer's boy, look at his hands." Why, every young fellow in the land tries to imitate the son of the farmer now, and in the university we are just as proud, and more so, of the boy that comes from the farm as from any other place in the world, and perhaps more so. And finally the boy, the son of the farmer, if he goes to an eastern college, is not ashamed to have the old father come down and see him, as was the case many years ago, sometimes. He meets the old father and introduces him to all his friends, and does not apologize because the father has no dress-coat. Finally the farmer's boy introduces the farmer to a beautiful girl of the college —the most beautiful in the whole world, and says, "Father, I am going to marry her, and I am going to confess to you, sir, that she is the daughter of one of the greatest railroad monopolists in the world." He marries the girl and brings her home. She is as proud of her father-in-law as a girl well may be, and he is proud that he started from that farm and that little school-house. He stood by it when he was a boy, he will stand by it now and forever.

The President: We will now have the pleasure of hearing a paper by Miss Nettie L. Smith, of Sun Prairie.

FARM DAUGHTERS.

By MISS NETTIE L. SMITH.

And yet what I have to say applies to all daughters. This is one of the peculiarities of life, that what we say to one class of men applies equally well to all classes. Mankind is so intricately woven together that the true good of one is the common good of all.

Amid all the bustle and confusion of this materialistic age there is yet a deep, broad current of sentimentalism. What I mean by sentimentalism is the endeavor to obtain individual perfection of thought and action, the striving for the qualities of soul and conduct that can not be bought or sold for dollars and cents. Underneath the exterior of greed and gain there is a heart that longs for a life less selfish, a life fuller and larger in love and helpfulness. Slowly the teachings of the Nazerene are working out the problems of life, men realize more and more that all are brethren. Here and there we see the leaven working, we hear men repeating, "The Fatherhood of God and the Brotherhood of man."

To no one class does the world look for more help in this great work than to the mothers and daughters. To the daughters more than the mothers, perhaps, as life and its opportunities are before them "to do whatsoever they will." There is one great question that confronts every daughter, the answering of which determines her whole life, yes, and the life of generations yet unborn. It is the question whether she will live a life of sordid selfishness, or whether by embracing broader aims, deeper life motives, she will ennoble self, deepen her own character and raise the lives of those around her to higher, purer plains. The one means a life of ease and pleasure, the other, a life of evil, of tribulation, aye of tumult, perhaps, yet at the attainment of such a life we hear the words — a noble woman — than which there can be no greater praise.

To be a womanly woman should be the aim of all true-

hearted daughters. From the wise and great Solomon down through the cycle of ages, woman has been the theme of many inspired pens. The world never grows weary of hearing her praises sung, never ceases to weep when some deed unworthy of herself compels the harpist to change his song from one of gladness to one of lamentations.

Well has it been said that "in woman lies all the hopes of half the world." What greater, nobler work, then, than to bring these hopes to perfect fruition! It lies within the power of every daughter to carry the hopes of her little world onward and upward, or to drag all down to misery and dispair. Oh daughter

> "Be a woman! on to duty —
> Raise the world from all that's low;
> Place high in the social heaven,
> Virtue's fair and radiant bow;
> Lend thy influence to each effort
> That shall raise our nature human,
> Be not fashion's gilded lady,
> Be a brave, whole-souled, true woman."

To the farm daughters as well as kings' daughters, the poet's cry comes,

> "Oh lift your natures up,
> Embrace high aims; work out your freedom; Girls,
> Knowledge is no longer a fountain seal'd;
> Drink deep, until the habits of the slave,
> The sins of emptiness, gossip, spite,
> And slander, die. Better not be at all
> Than not be noble.

There lies the secret to all noble living, — "drink deep at the fountain of knowledge." This life-giving water is not confined to college walls or wealthy homes, as many suppose. Its pure waters may be made to bubble up in every home of the land, if the home people only seek it.

One of the professors of our state university, used often to tell his students that a liberal education did not consist wholly in a college course regularly pursued, but rather in a broad, deep acquaintance with good books, with history, biography, poetry, science, and moral-toned novels.

"College training," he used to say, "was but a means to this end, a fortunate circumstance that enabled the mind to work more rapidly and with less friction." If his words be true, and none are truer, a liberal education lies within the reach of all, whether they have the rare advantage of a university training, or not.

Read, read with understanding, read for self-development, read that you may help others on to higher plains. I would that Ruskin's "Sesame and Lilies" were read, yes, prayed over by every daughter in the land.

The fact that farm work is hard and leaves small time for reading and self-culture, does not release farm daughters from the responsibility of making an effort, at least, in that direction. "These things ought ye to have done and not have left the others undone."

"Man does not live by bread alone," says our Saviour. We must not neglect the inner life of our families that the outer may be well clothed and housed.

The opportunity to neglect this inner life is perhaps greater on the farm than elsewhere. The careful housewife often unconsciously starves the souls of her household that the bodies may be well fed with pumpkin pies and ginger snaps; farm daughters must needs be more careful that heart and head receive their due share of attention.

Cut off from society and the lecture-going world, as most farms are, each family must be reading circle, musicale, and drawing-room, all in one. Each member of the family must in turn be entertainer and entertained. I have visited in just such happy farm homes, where, though miles away from village or town, we were in the midst of culture; we attended our greatest lecture halls, and drank of the wisdom of statesman and orator.

Farm life is just as pure, just as noble as farm daughters choose to make it. The horizon of the farm world may be marked by "father's wood lot" on the east, and "neighbor's hay barn" on the west, or the horizon line may be seen only where sky and sea and merge into one in mid-ocean.

To gain this high end means work, yes endless work and patience, but what though success seem never to crown our

efforts labor with what skill we may? If we strive on and on ever looking upward,

"Others I doubt not, if not we,
The issue of our toils shall see;
And (they forgotton and unknown)
Young children gather as their own
The harvest that the dead had sown."

In the economy of God, no good is ever lost; no noble effort ever in vain. I can but say to farm daughters what Dr. Bascom says to his students — "Live largely." All success, all loveliness, all that makes life truly worth the living, are bound up in those two words.

Think not that the farm life is confined to your kitchen walls, that the price of butter and eggs is all that concerns you. Make your life and the lives of those around you full of sunshine, of peace, and of purity, you can if you will.

"I give you the end of a golden string;
Only wind it into a ball;
It will lead you in at heaven's gate
Built in Jerusalem's wall.

The President — I have the pleasure and honor of introducing to you Prof. T. C. Chamberlin, president of the university.

THE COMING EVOLUTION IN FARMING.

The most profound change which any vocation ever undergoes is its passage from the rule of thumb to the rule of brain. All of the primitive callings were crude at the outset, but with time their processes improved; sometimes rapidly, more often slowly. Experience gradually developed rules and routines, sometimes rational, sometimes irrational, and these were handed down from father to son through generations. Sometimes these settled down into mere arbitrary dicta, or the imitation of others, and then the progress of the vocation came to a standstill. Sometimes they led on to inquiry into causes and reasons, and when these were found, the rules rose out of empiricism

into rationality, and the vocation moved onward to a higher plane. Thus each vocation has passed through an evolutionary process. But the progress has never been uniform. No calling has ever advanced from its primitive crude stage to its highest attainments by a perfectly steady ongoing. There are times of halting and times of pushing onward. As it is in the plant, there are times of rooting, times of leafing and times of blossoming and fruiting. The biennial plant spends a season in rooting and making ready and rests for a winter, before pushing up into flower and fruitage. The century plant lays up material for decades and then suddenly bursts forth into extraordinary florescence. And so it is, that evolutions sometimes become revolutions, so extraordinary are the changes that develop suddenly out of the forces that have been accumlating during the long past.

Such an evolution, which is to become a revolution, I believe to be now clearly foreshadowed in agriculture. I believe it, because forces are at work which are competent to produce it. I believe it, because the actual beginnings of the evolution itself are appearing. Farming is among the most venerable of all the regular callings. It has to deal with the most complex agencies. It is not strange, therefore, that it should have been long in coming into the full mastery of its intricate field. Its first steps of development have been slow like those of the century plant. Its blossoming may not be as sudden and spectacular, but its blossoming will come and will be grand and great. I believe it is at hand. I believe we are on the eve of the passage of agriculture from the reign of empirical rules to the reign of precise knowledge.

The grounds for this belief lie, first, in the general turning of attention to exact experimentation. Experimentation is only systematized experience — experience put under control, so as to determine precisely what the experience is, and to carry results back to their precise causes. Now, progressive farmers and experimental scientists are joining hands in a common endeavor to bring out into exact knowledge the foundation facts of agricultural experience. Never

before in the history of agriculture has there been such widespread earnestness and such well-directed efforts to determine the bottom truths of the profession. It is doubtful whether there ever has been in any vocation, at any given time, a greater amount of systematic experimentation than that which has been undertaken since the establishment of experiment stations throughout the land. It is doubtful whether in any other calling there has been a more broad and specific endeavor to probe the complex phenomena involved in the calling and to develop it into a scientific art. Two score stations, well endowed and devoted exclusively to discovering and demonstrating the basal truths of the profession, aided by the voluntary work of thousands of intelligent progressive farmers, surely constitute a rational ground of hope for a rapid and revolutionary development.

But we need not confine ourselves to agencies or to signs and symptoms. The buds and blossoms are already beginning to appear. Let us note a few of the foremost.

The cause and nature of soil fertility lies at the very foundation of agriculture, and has heretofore largely baffled inquiry. The chemist attacked it with every presumption of success. Certain substances were needed by the plant. If these substances were found in the soil it was fair to presume that the soil was fertile. A chemical analysis would show the measure of fertility. But common experience and scientific experimentation both showed that the elements of plant growth might be present in abundance and yet the soil not be productive, and, on the other hand, they might be scantly present and yet the growth be vigorous. And so, while the chemist taught us much that it is necessary to know, he did not reveal the full secret of fertility. The physicist attacked the problem, and he has shown us that certain physical conditions of the soil are promotive of plant growth and certain other physical conditions are uncongenial; but the physicist, while he has taught us much that it is valuable and necessary to know, has not revealed to us the essential secret of fertility. The geologist attacked the problem, and he has told us of the origin and history of soils; that certain soils are ancient and cer-

tain soils are new; that certain soils are derived from rock decay, and certain soils from rock grinding; that certain soils are gathering and certain soils are wasting; but while he has told us much that it is valuable to know, he has not revealed the essential secret of fertility. But now comes the biologist, from whom we had hoped nothing, whom we had not dreamed could reveal to us the secret of fertility, whose inquiries into the infinitesimal creatures in nature, we may have regarded as little more than curious and idle, and he, least expected of all, reveals to us at least one of the great secrets of fertility, perhaps the great central secret. It has been shown within the last two years, that the microbes of the soil play an important part in the development of certain plants, at least. Messrs. Lawes and Gilbert, following in the footsteps of Hellriegel and others, have experimented upon the functions performed by the microbes in the little nodules that appear on the roots of peas, clover, lupines and other leguminous plants and have reached most extraordinary results. By using clean washed sand in which all microbes were destroyed by heating and from which they were carefully kept afterwards, they secured only the most scanty growth, but by inoculating the sand with the proper microbes, they secured a greater growth than with garden and field soil. From these and other experiments, it appears to be clearly demonstrated that these little organisms have the power of taking in nitrogen from the atmosphere of the soil and transforming it into a condition suited to the use of the plants with which they are associated, while they doubtless receive in return from the plant something serviceable to themselves. It is a co-partnership for mutual benefit. It seems to be already shown that there is a group of microscopic organisms that take in nitrogen from the air, just as common plants take in carbonic gas, and animals take in oxygen. These organisms take in nitrogen and make it available for the plants, just as the plants take in carbonic dioxide and make it available for animals, and they, in turn, take in oxygen and give forth material available for microbes and plants. Here is a new and wonderful cycle.

We have been told from our childhood, of the mutual helpfulness of plants and animals; the one consuming that which is useless or noxious to the other, and giving forth that which is beneficial. And so plants serve animals and animals serve plants. We have been taught that the nitrogen of the atmosphere was but negative and that its function was but to dilute the oxygen. We have been left to wonder how plants secured an adequate supply of the nitrogen necessary to their existence and through them to the existence of animals. The new revelation seems to resolve the mystery. The cycle is enlarged. There is an organism feeding upon each of the atmospheric constituents and delivering over its waste products to the other organisms; a nitrogen extractor, serving the plants; which, in turn, are carbon extractors, serving the animals, which, in their turn, are oxygen extractors, serving both, a trinity of mutual servants. This may not be the whole secret of fertility, but it is clearly one of the secrets, and when we have fully uncovered it and brought it forth, we shall find the secrets that lie below it.

In view of this discovery is it not probable that we shall soon make an intelligent use of these nitrogen extracting organisms? Will it be at all strange, if we shall soon begin to cultivate microbes and sow our fields with bacilli? At any rate, is not here a coming development that will be important if not revolutionary?

Just as fertility lies at the bottom of agriculture, so feeding lies at the foundation of animal industry, and the recent fundamental discoveries in the one are matched by radical determinations in the other. The brilliant experiments of Prof. Henry and co-workers have led us far out on the road to a rational system of feeding, controlled with reference to specific ends. While these striking results are only claimed to be preliminary and partial, it is clear that we shall not have long to wait before we shall know, in a higher sense than ever before, how to feed, what to feed, when to feed and how long to continue feeding to produce the best results in a desired line. Feeding will surely be-

come a scientific art, controlled and directed by specific knowledge to specific ends.

Another line of new departure lies in the higher utilization of the first products of the farm. Among the complicated operations of the farmer there is an element of manufacture. First products are transformed into secondary products before they are put upon the market. The development of co-operative manufacture, especially in dairying, is a departure in the direction of a higher evolution, for it permits specialization and the application of skilled labor and improved methods that would be impracticable on the separate farms. It relieves the household of a heavy burden, and opens the way to a higher and freer home life.

But probably no greater danger ever threatened an industry than the incidental evils that sprang up in connection with the establishment of creameries. The purchase of milk by measure or weight, without regard to quality, offered a constant temptation to fraud, and the evil practices of one intensified the temptation of others to protect themselves against injustice by like deception on their part. Worse even than that, in its ultimate results on the industry, if it is possible for anything to be worse than a fraud, was the fact that a premium was put upon cows that would give a mere watery tincture of casein and a heavy discount on those that gave a rich creamy product, because of the greater care and more generous food required to produce an equal quantity of the latter. The degeneration of the dairy interest would have speedily followed had not a check been discovered and applied to the evil, in the purchase of milk according to its real value and not its volume. An improved milk test was a necessity of the crisis. One after another appeared until, in that of our own Dr. Babcock, we have one available to every intelligent farmer at trivial cost, a test which not only makes it possible to guard against fraud but whose use will stimulate and guide the development of the milch cow as the time-track has stimulated and guided the development of the trotting horse. The introduction of the cheap and trustworthy milk-test marks an epoch in the develop-

ment of dairying, because it demonstrates the actual merits of products and processes, and makes inevitable the development of the good and the condemnation of the bad.

These are but salient points of the coming evolution. They are but forerunners in a great train of demonstrations of like significance. But I must turn to another phase.

Increased intelligence and discrimination among townsmen is a factor in the coming development. Farmers by the hundred have been pouring into the common market of the city their products almost without discrimination or distinction. Milk is milk and butter is butter. Wheat and other grains are graded, to be sure, but the distinction is slight. The shopping and marketing housewife inquires the price of muslin, and is given a range of more than one hundred per cent., according to quality. She inquires the price of butter and is given a definite figure. Quality is ignored, save in occasional instances, and then the difference is but one or two cents per pound. Now, is not the range in quality of butter equal to the range in quality of muslin, and is not the difference in quality equally important, since it affects not only service and taste, but health? Now this lack of discrimination in quality in the market stands against the good and in favor of the poor, and its effects are damaging, morally and commercially. It is not due to prejudice. The townsman would as soon favor his country neighbor as the cotton manufacturer of Rhode Island. It is partly because he has not the practical means of making the discrimination between good and bad, and partly because he is not educated to the importance of making the discrimination. The recent wonderful revelations respecting the bacterial origin of many diseases, and the fact that they may be derived from the domestic animals through their various products, is sure to awaken townsmen to the prime importance of discrimination, and will impel them to pay advanced prices for pure and healthy products, guaranteed by care and conscientiousness on the part of the producer. The way is now open to advanced compensation by producing a superior and trustworthy product. This must be done by establishing an individual reputation

for ability and integrity as a producer, just as the manufacturer of other goods is compelled to do. In such a reputation lies both honor and profit.

The movement toward better things in this direction is already begun, both through increased discrimination among purchasers and increased effort to furnish high-quality products among farmers. Co-operative manufacture obviates one of the chief difficulties that lie in the way of developing a discriminative market and a constant high-grade supply. The smaller producer cannot guarantee a constant and ample supply at all seasons, nor can he easily maintain a special demand without going aside from the ordinary channels of trade to supply special customers, which involves extra labor and inconvenience. But the factory, producing a large and more nearly constant supply, has it in its power to create and supply a special demand for its superior products and to secure special prices. To do this, it must exercise a moral control over the material furnished by its patrons, and this it will be enabled to do through the tests that are now at command and the further tests that are sure to de discovered. Thus the effort at superiority will re-act on the whole community to its benefit.

Progress toward better methods would be greatly promoted if every producer, in whatever calling, were required by law to stamp his name upon his product, wherever possible, and were made responsible for it, so that every man should be known and judged by his works, than which there is no more righteous judgment.

These last suggestions lead me to note one further characteristic of the coming evolution. It will be a moral as well as an industrial evolution The seeking after real truth, whether it be in the industrial line or elsewhere, is in itself a moral endeavor and has a beneficent, moral influence. The effort to produce that which is constantly better and better, is, in itself, a virtue. To aid in the promotion and survival of the fittest, and in the condemnation and elimination of the unworthy, is in the line of ethical, as well as material progress. The detection and suppression of fraud subserves the common interests of humanity.

These are only some of the "coming events that cast their shadows before"; perhaps not the greatest ones, but yet those which have most impressed one, who, while standing somewhat aside from the immediate current of progress, yet watches it with intense interest.

You know that the developing insect, just before he moults or bursts his chrysalis, and comes forth into a new and brighter life, is often seized with disquietude, and twists and wriggles, until the confining integument is broken and lets him free. So, perhaps we may see in the disquietude and the diverse movements of the farmers throughout the land, the premonition of a new and higher stage. But I venture to suggest that it will lie in the line of the immediate development of the profession itself, and not in any notable degree in extraneous political conditions. But, however that may be, the light is breaking and a new day is at hand.

The President—I thank you cordially for your attendance this evening. Sessions of the convention will be held to-morrow morning at 9 o'clock, and at 2 o'clock in the afternoon. To-morrow evening there will be another session held in this chamber, to which your attendance is invited.

WEDNESDAY, February 4, 1891, 2 P. M.

Meeting called to order by the president.

The President—I am requested to announce that immediately after this session of the convention there will be a meeting of the Farmer's Alliance, in this hall. We will now listen to a paper:

"SAVING AND APPLICATION OF STABLE MANURE."

BY MR. THOMAS CONVEY, of Ridgeway, Wis.

The saving and application of manures, while a subject worthy of discussion, is yet so poorly comprehended, that we rarely find two persons who agree in either the saving or application. Yet those who have given the most study to the subject are agreed that 50 per cent. of the manurial value of our crops is lost or unavailable to our ordinary farm crops. This to many persons may appear a rather extravagant statement, but if we except the grass crop it is literally true, and there is sometimes a larger loss during the pasture season where animals are yarded in brush lots or dry yards not intended to raise crops.

In saving manures there are certain wastes to be guarded against; loss by leaching being one of the greatest magnitude, and where the liquid droppings are allowed to escape, and the soluble portions of the solids are leached out with rains, snow, etc., a very small portion of the manurial value is retained. Experiments extending during the entire year with a single cow, have enabled experimentors to determine that the nitrogen contained in the liquid droppings alone sometimes amount to 180 pounds, the amount being less in other farm animals.

The other principle loss is by evaporation, and this is only worthy of attention when there is excessive fermentation, the latter condition frequently occurring with rich manures, notably horse manures, the liquid portions, especially in warm weather, generating an ammoniacal gas, consisting mainly of nitrogen. The escape of this gas tends to impoverish the manure and renders the atmosphere very unhealthy. Another considerable loss in handling manure is a loss of labor due to unnecessary handling; and to this may be added the neglect to handle when time is least valuable, and when manure may be hauled with least injury to the ground.

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The quality of manure depends more on the kind of food given to the animal than it does on the kind of animal. Rich foods produce rich manures, an animal rarely utilizing ten per cent. of the fertility contained in the food.

After trying various methods of handling, I have come to the conclusions, that manure gains no additional fertility by storage under any circumstances. That fermentation means loss in quantity, although it may hasten the decomposition of woody fibre, and produce a condition in which its fertility may be more rapidly exhausted; that fresh manures can be safely applied to corn land, pastures or meadows; that the shorter the time from the animal to the field the less loss is likely to occur in fertility or labor; that manure should be spread when hauled; that it usually pays to buy foods rich in fertility, as bran, oil cake, clover, hay, etc., especially when some system of farming is followed that tends to impoverish the soil, notably, selling milk, and that the less yard feeding we do in the production of milk or beef the better it is for the producer, the products and the manurial residue. There may be exceptions to all of these statements, but they are not so numerous as many would suppose. When the weather and condition of the ground permit stock may be fed on pasture or plow land, when out for exercise, and very little food or fertility will be lost. Water-tight gutters, or their equivalent, are necessary and if the escaping ammonia becomes offensive, absorbents such as land plaster, road dust or litter will have to be used. I prefer to top-dress fall plowing during the winter, thoroughly cultivating in the spring, and I have also top-dressed clover land, plowing under just before planting, with excellent results; have also top-dressed pasture and meadow with good results. I would only plow in such manures as were too coarse to permit of satisfactory cultivation, plowing in shallow and cultivating thoroughly, then planting to corn.

Undue fermentation may be guarded against in various ways. Where manure is trodden down so that the air will not penetrate the mass, there is very little fermentation

and consequently little loss, where kept under cover; where it is kept in compact piles in the open air, and it is kept sufficiently moist, leaching is more likely to take place than fermentation; occasional stirring also tends to check fermentation. Manures thoroughly mixed with the surface soil ferment rapidly when the weather is warm, and as the leaching is always downward they should be as near the surface as is consistent with their even distribution in the soil.

Where manure is hauled out during winter and spring the soluble portions are leached into the surface soil and are immediately available as plant food; on the contrary if applied late in the season there may not be sufficient moisture to produce leaching and no good results are observed, as plants can only take up fertility when there is sufficient moisture present.

The average yield of the wheat, oats and corn crop, as reported by the department of agriculture, is so ridiculously low that it would not pay for the labor involved in producing it, and yet it is gradually getting less, notwithstanding the fact that we are cropping new land every year. We boast of our intelligence, and yet the Japanese, with the crudest kind of agricultural implements and without resorting to animal husbandry, produce from three to five times as much on a corresponding amount of territory, and support a population eight times as dense as Wisconsin. Belgium supports a population more than sixteen times as dense, and agriculture is the leading industry.

Our low crop average is not due to an unfertile soil nor an unfavorable climate, but is rather due to gross carelessness in saving and applying manures, poor cultivation and a total disregard of rotation of crops, the most important of which is clover.

The President: We will now listen to a paper by Mr. A. F. Noyes, entitled "Small Grains."

SMALL GRAINS.

BY A. F. NOYES, BEAVER DAM.

The importance of the culture of small grain has been overlooked or neglected in a great measure, until we have come to think their cultivation, yield and value are but a side issue and of little moment.

These grains as placed in the order of relative yield, are oats, barley, wheat and rye, as (ascertained from the report of the secretary of state of Wisconsin), with which this paper has more particularly to do. Their market values are relatively the same or very nearly so, as the United States agricultural bureau reports. The yields, as near as can be ascertained from these reports, for the year 1890, are 40,000,000 bushels of oats, 12,000,000 bushels of barley, 9,000,000 bushels of wheat, and 1,500,000 bushels of rye, a total of more than 60,000,000 bushels of grain; worth in the home market upwards of $31,000,000, exceeding in value by $2,000,000, the corn, hay, butter and cheese crops combined, for the same year of 1890, as compiled from the same reports.

Dairymen may question these figures. They claim more than $29,000,000 worth of cheese and butter alone, let alone the corn and hay. I do not claim either set of figures are absolutely correct, perhaps one set is more nearly correct than the other. What I do claim is, that they are all honestly obtained from these reports. But whether the result obtained is correct, or not, products of the value of over $30,000,000 are of enough moment to the producers, to take valuable time to secure an improvement of culture, with a certain result of a greater aggregate value of product. Comparisons are valuable if true. Figures often lie. But the farmer who is getting ahead, by systematic, intelligent farming, is a success that you and I can learn of.

That we may the more definitely understand the situation as it is, I will say that the estimate of average yield for Wisconsin, is 26 bushels of oats, 22 bushels of barley, 12 bushels of wheat and 12 bushels of rye, per acre, as near as may be.

That the yields of grain as averaged by Wisconsin farmers are of less value than the cost of production, is true, and the farmer who cannot produce a grain crop, above this average had better quit.

That many nearly double the average in one or more of the grains we all know. The meat in the cocoanut which we all want to get at, is to how increase the yield profitably.

To the intelligent observer who has seen more or less of the methods as pursued in Wisconsin in grain raising, it is no wonder that the average is so low; the only wonder is that with the neglect the soil receives it is no lower. The old English farmer of a century ago who gave utterance to the phrase "tillage is manure," struck the key note of success in grain culture, for without good tillage failure will be sure. Better tillage, intensive cultivation should be our aim. There is no use mincing matters, better tillage *is manure*. If one could teach every farmer in Wisconsin the full import of that phrase, we would be more than half way to a successful small grain farming.

A rotation of crops is correct, and should be followed as far as practicable. Where grain raising is only followed as an adjunct to animal or dairy farming, one grain crop in the rotation is sufficient. But where the farms are larger and grain raising is on more of an equality with the other farm products, two crops of grain may be profitably grown in succession. With us oats or rye do well on fall plowed sod, and barley generally does well on a sod entirely clover, or when second crop clover is plowed in. Barley or wheat following the rye, oats or barley as the case may be. *Succotash*—that is oats and wheat mixed—is undoubtedly the most profitable crop when it is thought best to sow wheat. Barley will do the best of any of the grains after corn, but better yet after potatoes. In all our plans we must remember that each crop has its time of growth, and its time of ripening, and they must be so arranged that as each crop ripens we may be found ready with and for the harvest.

As the preparation of a good seed bed for the crop is indispensible, thorough plowing is the first part of the process

of tillage, as it is only labor well applied that conquers all things; so in successful tillage, labor must be properly and timely applied. We should be conservative enough to stop working the soil when too wet, although it will answer to plow land somewhat wet, late in the fall, as then the sun is not warm enough to bake it, and the soil by freezing and thawing counteracts the bad effects. It is a safe assertion to make, that our lands will amply repay the cost of twice the cultivation they now receive.

Lawes and Gilbert report a greater yield per acre on unmanured land than we in Wisconein do on our almost new soil, and have done so for more than forty years in succession on the same land. Perhaps climate has had something to do with this, yet tillage alone, is mostly responsible for those yields. We observe that the good farmer plows early and often as well as thoroughly and evenly; plows at a uniform depth, and leaves it as nearly level as possible, covering the stubble, manure and weeds entirely; cultivates in the fall to reduce the soil to a fine tilth, the air and the rain decomposing the finer particles of soil, the frost disintegrating the larger, thus changing the inert plant food, into soluble and available fertility; cultivates the soil in the spring with tools that pulverize and fines it for a perfect seed bed. Drilling the seed at an even depth, the lighter the soil the deeper the sowing, the heavier the soil the shallower the sowing; sowing clover with the grain on clean land, first, and most importantance, to prevent the loss of nitric acid that is liberated in a greater degree in warm weather, and lost if not absorbed by the rootlets of growing plants, and secondly to serve as food for stock after the pasture becomes short and dry, and for the coming hay crop. If the fields are weedy, plowing at once, after grain is stacked, will prevent the seeding of one crop of weeds. Sowing the plowed land to oats, where winter wheat is not profitable, will start the weeds that live over winter and that blossom and seed in early summer, which will be killed by turning again, the full cost of which work will be gathered at the harvest, let alone the manurial value of the oat leaves and roots.

As there must be an incentive for every good act, so we should choose those crops which force us to till the soil most thoroughly; for the law of recompense is inevitable, in that, well directed effort has its reward. A few farmers practicing rolling noticed that a grain crop on rolled land, gained in foliage and earliness over that on unrolled land. The last bulletin of our experimental station gave the results of a number of tests, and proved conclusively that the seed germinated quicker and in greater numbers on rolled land. The progressive farmer sows salt to stiffen the growth of straw, diminishing the chance of rust, causing the plant thus strengthened to produce a brighter and heavier kernel; sows seed that is sound, clean, bright and of good pedigree; cuts his grain when in the golden prime, although it is best to cut barley a little green, shocking in long shocks, leaving uncapped for a day or two, this practice giving a lighter color and a longer price to the grain.

It is commonly acknowledged that the oat crop has been neglected, the wheat crop sown under protest, the rye put in as a catch crop, while in the barley section, that has been the money crop,—Wisconsin farms producing one-fifth of all the barley grown in the United States. To grow a paying crop of barley requires better soil, better tillage, and better methods than any of the other grains, and it is believed that special fertilizers may be used more profitably on this crop than any other. The poet says, "Man's greatest enemy is man." Just so the greatest enemy of plants—are plants. Weed plants—an excess of grain plants in a grain field are weeds in a certain sense—prevent best results. Wisconsin farms have received little else than barnyard manures, and yet by the use of special fertilizers we may double and trible the yield of grain, whether profitably or not must be determined by experiment and it may not be out of the way to notice a few experiments in this line in other states and on other lands.

Many years ago it was stated by Messrs. Lawes and Gilbert, as the result of the experiments at Rothhamstead, that as far as they had then proceeded the farmer might assume, for practical purposes, that he would on the average

of seasons, get one bushel of increased product of wheat, with its propo tionate increase of straw, for every five pounds of nitrogen applied as manure for the crop, provided the soil was not deficient in the necessary mineral constituents; and the results of later years have fully confirmed them. They also say that minerals increased the yield over no manure two and one-half bushels of wheat per acre, while with minerals and 550 pounds of nitrate of soda, an increased yield of about twenty-five bushels on the average was secured, in 1863 going as high as thirty-eight and one-half bushel increase, over no manure, and Dr. Volker's experiments produced almost exactly the same results. Average barnyard manure contains ten pounds of nitrogen per ton, nitrate of soda nearly ten pounds of nitrogen per 100 weight. Except for its mechanical effect and indirect benefit to the soil, all or nearly all the manurial value of barnyard manure is due to the nitrogen which it contains, and most of our soils contain enough mineral constituents to produce repeated crops without any addition. It is possible that nitrate of soda may be profitably used on the barley crop, if not on oats and wheat. If any experiments with fertilizers containing a good per cent. of nitrogen have been made in Wisconsin, it would be well to give them publicity.

Agricultural chemists tell us that these crops remove in the grain and the straw more potash than phosphoric acid, the grain alone containing nearly twice as much phosphoric acid as potash. The potash has gone more largely into the straw and grasses, and therefore finds its way into the manure, and thence back to the fields. Nitrogen is also returned to the soil in greater quantity than phosphoric acid, and can cheaply be secured by plowing under clover. Thus we may safely conclude that when the soil has been impoverished by continuous grain growing, by applying nitrogen, phosphoric acid and potash, without any other addition, we may reach the former yields.

A few words in regard to seed may also be proper. Prof. Sanborn, of Missouri, has collected a large amount of data

showing that the selection of seed works analogously to like procedure with animals. Stiffness of straw in a weak sort, may be increased by selecting those in the field that stand most firmly. A non-rusted plant among rusted ones, will likely have more resistent power than those rusted. Long full heads are more likely to produce that sort than short ones. The field is the place to select the seed, for there we can look the plant in the face. A few hours work each year would give us a constantly progressive type of grain, for each selection would soon become the basis of seed for the farm.

Prof. Sanborn also further says: "I should expect to receive advantage by sowing a grain grown on a richer farm than my own, and where the grain actually yielded more than my own. On the same principle that a breed of steers, bred and fed into greater productiveness, like the shorthorn over the scrub, would have greater powers of growth. On the reverse, if I took seed from a poor farm, where it had been fed down to a low limit of yield, I would expect, like a stunted race of men, this effect for a while to be manifest."

The rains may drown the plant, the sun may corch it, insects may eat its foliage, smuts, mildews, and rust, may prey upon it.

The life of any plant, especially a cultivated plant, is a constant struggle, but we must remember that in this it does not differ from other forms of life. At the Kansas Experiment Station last season there was obtained an increased yield of five to six bushels of oats per acre, by sowing three varieties mixed. One swallow does not make a summer no more than one experimental fact makes a general fact.

Our experiment stations are working in unison, and yet but marking in plainer words, truths that are as old as nature; 31 stations are now studying tillage and chemistry; 35 analyzing fertilizers; 39 are studying crops as to yield, composition, etc.; 33 are working in botany, especially in fungus diseases and testing of seeds; showing the possibilities of the coming farmer, giving aid and encour-

agement in all his trials and struggles for success in his chosen occupation, doing in a greater measure what this paper has attempted in a small way, yet repeating the same old story, that "like begets like" that toil and labor shall have its recompense, commensurate in a great degree with a knowledge of the proper methods of applying tillage and fertility.

Our ignorance of the intricate workings of earth, air, sun and water, in the production of grain at the harvest from the germ at the seed time, stand in the way of full success; but knowledge is power, the day is dawning, the farmer of Wisconsin is coming to successfully grow the staff of life.

The President — I am requested to announce that there will be a meeting of the Jersey breeders at 7:30 o'clock this evening, at the office of the Dairy and Food Commissioner, below.

The Secretary — Recognizing as I do that the value of this convention depends very much upon the manner in which it is taken hold of by the audience, I wish to urge friends to take a full and free part in the discussions of all the topics that may be presented.

DISCUSSION ON NOYES' PAPER.

Mr. McKerrow, of Sussex — I would like to ask the gentleman if he would advise deep or shallow plowing in the fall? He speaks of early plowing, I understand. Would he advise plowing deep enough to bring up any of the sub-soil?

Mr. Noyes — In reply, I will say, that my experience and observation goes to show that the deeper plowing should be late in the fall — the last plowing.

Mr. McKerrow — Let me understand. Do you advise deepening your plowing by bringing up a little sub-soil occasionally?

Mr. Noyes — Yes.

Mr. McKerrow — How often?

Mr. Noyes — Once in four or five years.

Mr. McKerrow — How much?

Mr. Noyes — We cannot go down very deep on account of the rock. A half an inch would not harm, say once in every three, four or five years.

Mr. McKerrow — Would you advise dragging spring grain after it had come through the ground?

Mr. Noyes — I have dragged winter grains after the ground was settled and dry in the spring; but as I generally sow clover with the spring grains, of course I cannot harrow it.

Mr. Linse — I would like to ask the gentleman in regard to the amount of seed he uses in different grains, for instance barley?

Mr. Noyes — I sow seven and one-half pecks of barley, and have for ten years successively. Wheat about the same. The last two years just the same of oats, rye two bushels on sod.

Mr. McKerrow — Have you tried sowing wheat and oats together?

Mr. Noyes — Yes; I sowed wheat and oats together the first time last season; but my brother has sown wheat and oats mixed twelve or fifteen years. I have helped him to thresh most every year, and I notice he obtains about the same number of bushels per acre of wheat as his neighbors, besides the oats, and has a better quality of both wheat and oats.

Mr. McKerrow — What proportions?

Mr. Noyes — He sows about one-fifth oats and the balance wheat. That will give about half and half, varying a little more or less, according to the season. The wheat stands below, the oats come above, somehow the climate and atmosphere seem to agree with it better.

Mr. J. V. Jones — I would like to ask the reason of not being able to till after he sows grass seed in the spring.

Mr. Noyes — The clover plant is broken, is killed; and as I sow the clover for the benefit it will do the land, I don't wish to kill it.

Mr. Jones—Sow in the fall?

Mr. Noyes—In the spring.

Mr. Fish—What is your object in dragging the spring grain after it has come up? Don't it do more harm than good?

Mr. Noyes—For the reason that "tillage is manure," that cultivation improves the land and benefits the plant.

Mr. Utter—I would ask you to explain how tillage is manure?

Mr. Noyes—I do not know as I can explain, but I believe it—I know it. You can take a field planted to corn; one-half you may cultivate just enough to keep the weeds down, it being a clean piece of land; the other half cultivate properly, and you will double the yield. We have cases of that kind in my county every year, and we must conclude that the results support the truth of the statement "tillage is manure."

The President—Prof. Henry will answer the question.

Prof. Henry—What is the question?

The President—The question is, "How is tillage manure?" What is the effect and advantage to grain from tillage?

Prof. Henry—I think the statement that tillage is manure is practically correct. We are just opening up a new field in scientific agriculture, where it is being found that there are living organisms working in the soil for the elaboration of plant food. On almost every field there grows up each year more or less vegetation, which, falling on the land, becomes incorporated with the soil. This vegetable material gives our soil its dark appearance. The roots of growing plants are not able to appropriate the nitrogen in the vegetable matter in the soil, in the form in which it exists in the dead materials. In that condition it is largely inert and useless for plant food. It has been shown, and is now conceded, that micro-organisms exist in the soil, which attack the dead vegetation about them, and prepare portions of it for plant food. This change is called "*nitrification*," the nitrogen in the decaying vegetation being changed into nitrates, in which form the nitrogen

becomes available to growing plants through their roots. Perhaps the first hint of this work was given when nitre was produced from leaching the soil. You have read that in times of war, some nations have lacked gunpowder, and the material out of which to make it. The soil about buildings was dug up, and the liquid obtained boiled down and nitre produced. It was early found that by stirring the soil, which was being leached, that the amount of nitre was materially increased. So it has been found that stirring the soil in the fields favors the growth and multiplication of these organisms. In tillage, then, we are not only destroying weeds, conserving moisture, but also making the conditions favorable to organisms, which render inert nitrogen available to growing plants, through their roots.

Mr. Lawton — I would like to ask Mr. Noyes if he uses plaster on clover, and if so, when and how much?

Mr. Noyes — Yes. I sowed about 200 pounds the last two years on clover. As soon as we can get on to the land after seeding, as soon as we get our work finished and it is dry enough. Sometimes it is a little wet and we delay it a few days.

Mr. Lawton — Do you drag it in?

Mr. Noyes — No, sir.

Mr. McKerrow — Do you use salt on your grain crops?

Mr. Noyes — Yes.

Mr. McKerrow: With what results?

Mr. Noyes — Good results so far as I have observed. I do not think there is any doubt that it adds to the quality and weight of your grain. There is a small measure of fertility in salt. But that is something that I cannot exactly explain. I suppose it stiffens the straw by adding fertility to the growing plant; that it does stiffen the straw I do not think there is any doubt.

Mr. Utter: There seems to be a consensus of opinion that the salt makes land capable of bringing out the fertility that is in the soil.

Mr. Ames — Chairman, call Prof. Henry.

The President: You are the hired man of the state, Prof. Henry.

Prof. Henry—I thank you for the confidence you show; but let me assure you, that while I am working with you and for you, and while my time is altogether given up to the work of investigation, and advancing our knowledge of agriculture, we yet stand close together. They who have traveled farthest along the road of human knowledge are yet within hailing distance of their fellow men. Do you know that the words manure and tillage, really mean one and the same thing? Manure comes from the Latin word, *manus*, meaning hand. We have the phrase "manual labor," meaning hand labor. The original meaning of the word manure was "to cultivate by manual labor, or to till." The word "manure," a verb, means to till, to work by hand, a secondary meaning being to enrich. From the verb we get the noun, which means to make productive. So from a language standpoint, manure and tillage are identical. In the art of farming they go hand in hand, tillage oftentimes taking the place of fertilizers.

Now, about the salt. Salt is exceedingly valuable for some plants on certain soils. We can hardly call it plant food, for there is usually an abundance of sodium and chlorine, the constituents of salt, in any soil, and the plants do not require more of these elements than the land is usually well able to supply. The salt, however, seems to set free other elements in the soil which the plants cannot and do not so readily obtain. In this way, or in some other, the effect of the salt is very marked, in many cases making the straw of spring grain much stiffer and brighter. The effect of stiffening the straw is often of great advantage to this crop.

At the Experiment Station we have tried salt in varying quantities, and have found little or no good resulting from its use, even when applied in large quantities. Let me urge upon you to regard your own farms as experiment stations, where certain problems must be worked out by you individually if you are to get the knowledge you so much desire. Salt is a fine illustration of what I am de-

sirous of incalculating. Because we get no good from it at the Experiment Station is no sign it is of no use on your farm, and because salt is valuable on your farm it is by no means certain it is equally helpful to your neighbor. What the land contained originally in the state of nature, what kind of crops have been taken from it, and what fertilizers put back, all of these are factors which go to make up the answer of whether salt or any other substance you might think of applying is helpful or not. Each farm must, in a measure, be an experiment station, and each farmer an experimenter.

Question — Is it not a fact that it loses its effect after a few years, used in the same soil?

Prof. Henry — I should not be surprised; that is reasonable.

Mr. Scoville — Where they have used salt year after year the soil becomes hardened. The best farmers only sow grain in rotation with other crops, and then the salt appears to work well. Is it not a fact that the application of salt helps the soil to retain the moisture?

Prof. Henry — I think that it has been found to be the case in several instances by actual test of the moisture of the soil. Salt does to a certain extent conserve the moisture.

The discovery that leguminous plants are able to get free nitrogen from the air, should interest every farmer in the land, and is without doubt the most valuable help ever given to our agriculture by science. Years ago, Lawes, Gilbert and Pugh, of England, conducted some elaborate experiments with plants, growing in pots, to ascertain if a plant can get free nitrogen from the air. Every precaution was taken and no expense spared, to conduct the experiments carefully and fairly. Their conclusions were that no nitrogen was taken up by the leaves of plants, from the air, and that all the nitrogen obtained, so far as they could see, came from the nitrogen compounds already in the soil; that is, that even the nitrogen existing in a free state in the soil as common air, could not help the plants through the roots. These results from such careful men, seemed to put the sub-

ject beyond question, but no one was satisfied because it left us in a most helpless, hopeless condition. Every time vegetation decayed, every time a tree was destroyed, every time a fire swept over the prairie the nitrogen of the materials destroyed or burned up, was changed from organic to free-nitrogen, becoming a gas and was lost forever to the soil. If this theory was correct, our farms must become poorer and poorer, as a whole, in spite of everything we could do.

Against this theory the little clover plant has ever stood as a protest. Even though a good crop of hay was taken from the clover plant, it was found that the surface soil was more fertile than it would have been with most other crops, had nothing removed. The one to give the doubt its first definite form was Prof. W. O. Atwater, of Middletown, Conn., now director of the office of experiment stations in the department of agriculture, Washington. Time prevents even a brief description of his work, but it was found that in some way, leguminous plants, especially the pea, obtained nitrogen in very considerable quantities from some other source than from organic nitrogen in the soil. Next came the work of Hellriegel, a patient German investigator, a brief summary of which I will give you. Plants of different kinds were grown in flower pots, and all the usual sources of nitrogen carefully eliminated. In soils free from nitrogen it was found that when leguminous plants were watered with water in which had been placed a little of the soil from the clover fields that such plants would make fine growth and in time contain far more nitrogen than there was in the seed from which they grew, and in the water which nourished them. It was observed that those little plants which flourished had little tubercles or nodules on the roots, just below the surface of the soil. Those plants which dwindled, turned yellow and died under the harsh treatment, showed none of these tubercles. Our patient German investigator inquired why these tubercles, and why do the plants having them flourish so satisfactorily; can the tubercles be helpful in any way in obtaining the nitrogen? A microscopic examination showed that

these little white knots on the clover roots were full of living things, micro-organisms; and to cut a long story short, it was these minute organisms that were taking from the air nitrogen, making it a compound substance, and turning it over to the clover plant so that root, stem, leaf and blossom might grow in full proportions. Here we have the grandest discovery ever made in agriculture, the most potent investigation, in some respects, ever carried on by mankind. We have found at last, that our leguminous plants can reach out into the air through the intermediate organism, take up the free nitrogen which is so abundant, fix it, and in being consumed by animals, or decaying in the soil, give nitrogen to all that needs it.

For ages farmers and scientists have been puzzled over what the little white knots on the clover roots were. Some farmers have called them underground clover seeds. Some scientists have thought that they were excresencies due to parasites, and so in a measure were diseased parts. I can not take your time any longer, but next spring, when you go into the cloverfield, pull up a plant, look at these little white, seed-like knots, and remember that within them are myraids of living organisms each of which is busy at work taking the precious nitrogen from the air and turning it over to that royal plant which has been the sheet-anchor of all successful farming in this country.

Mr. Linse — Why does the land plaster not act in certain soils, while it does in others?

Prof. Henry — It may be in those cases where it does not act, those germs have all that kind of food they want, or that stimulates them in that kind of soil.

The president — The professor's paper does not come on until Friday. From now until then we shall have plenty of opportunity to pump him.

Question — Have you ever had any experience with seed from a distance?

Mr. Noyes — I obtained four bushels of barley from the southwestern part of the state last spring. It yielded fifty bushels to the acre on not very strong land, and that is better than my crops averaged taken from better land. I

"Leiston," Suffolk Horse, Property of Galbraith Bros., Janesville, Wis.

sow the same kinds of barley, and until I come across this report of Prof. Sanborn's, my impression was that way; and I have noticed that if it came from a field producing a greater product, it would do better than if it came from a field producing a small product.

Mr. Robinson — I believe there are a great many in the room that are not clear on the plan of dragging spring grain. I would like to ask the gentleman if he don't think that it covers up and drags out enough to make it detrimental to do so?

Mr. Noyes — No, sir; not on land that has been rolled. If it is left full of clods and large lumps, you can cover half of it up if you wish. I don't think a field of small grain is finished until it is rolled.

The President: The next paper will be on

CORN CULTURE,

By O. S. SISSON, West Salem, Wis.

We find in the production of this crop by our *brother farmers,* that some cause, either carelessness, negligence or want of time, has produced great and serious hindrances, yes, and almost total failures.

We are led to believe that these unprofitable and disastrous results are mainly due "to carelessness." Though isolated cases may be recalled where there is a lack of sound reasoning and good judgment in supposing that any kind of soil and location on top of our Wisconsin "terra firma" will raise a corn crop successfully and with profit for the husbandman.

Let us consider for a few moments the common manner in which this crop is produced. With nothing premeditated, no forethought, no system, no preparation, nothing of encouragement to look forward to, and no great end sought for, only to say, Well, I'll risk it and trust to luck.

If we submit Webster's definition of luck, "That which happens to a person," we may find no use for an elaborate silo. A few small stooks set up among the weeds, which have been given control, is all we find.

No use for an elaborate corn crib;—a square pen built up of old rails, the cracks chinked with straw, will suffice to hold the crop. No use for a fine thrifty lot of steers;—a few stunted calves will soon lay claim to more than the supply. No use for 70 or 80 fine growing shoats to fatten;—a few razor-backs will do, that can make their nests and get their own living from the weeds that have been left in the field; and when 20 months old are put on the market for *bacon*, at an average of 130 pounds apiece.

And so we might go on enumerating evils that have heretofore lessened the crop here in Wisconsin and in other states through unwise farming. But the day is dawning, and the mists are fast clearing away. Such management is becoming a thing of the past.

In corn culture the adaptation of the soil must be taken into consideration, and be very carefully regarded, if the best results are to be achieved. Adaptation means fitness, suitableness, hence, we cannot admit for a moment that because a certain piece of ground is very rich and fertile, producing grasses in abundance. that it is suitable for this crop; or, in supposing that because it is high and rolling, there will be no barriers to fight against.

The soil for this crop must be secured and put in perfect condition previous to the time of planting. If it has been treated to a rotation and finished up with a good crop of clover the year before, and has been well fertilized, has also sand enough in it to give it the warming qualities (for corn is a great plant for heat), then we have some hope of success. But the piece of ground, after having all of these *essentials*, must be well fitted before receiving the seed. To do this use any agricultural implement that will do this work effectually; and do not stop until the surface of the soil is pulverized thoroughly and finely to the depth of two or three inches. A fine tooth harrow is an almost indispensible article for this purpose. It puts on the finishing

touches by destroying all *early, young sprouts* of the different seeds that lay near the surface of the ground, which usually make their first appearance following a few fine days, when the *sun's* rays have become bright and warm.

Experience has given us the greatest *proof* in selecting and curing seed; that it should be done before any very severe and hard freezing weather sets in. Select good large ears with uniform kernels. The smallest cob is usually found in a variety where the kernel is long and deep. Put it in some secure place where it will dry rapidly; you will first observe a looseness of the kernels, which will allow the moisture of the cob to escape without injury to the germ, and the ear, as it dries, will afterward become firm and solid.

Plant either in hills or in drills. Under the most favorable circumstances a slight excess in yield will be found by the drill system.

If a prime condition of soil has not been secured the hill system will prove a safer method, as more of the ground can be stirred up with the team and cultivator, and more hand labor be dispensed with, which tends to reduce the cost of production, which is a necessary item to us poor farmers. The depth in planting is essential and often times the yield will be governed largely by this. In early planting, moisture is generally found near the surface sufficient to sprout the kernel if not covered more than one inch, which is deep enough in all soils of clay or loam. If the soil is largely sand (which is more porous) deeper planting would not be dangerous as the ground would not bake and become so hard that the shoots would not come through. The same rule may in a measure be applied to the depth of cultivating. But use due care and not disturb the roots which are near the surface of the ground. After the corn attains a growth of two feet, keep the weeds down and the ground well stirred. This can be done with a slanting tooth harrow till the rows can be seen. After this the six shovel cultivator placed in the hands of a competent person will be all the implement required for the warfare against weeds. Time, attention, promptness and activity

must be given at this stage. If you have not yet learned it we would refer you to the good old lady down in Indiana who wished to visit her sister living some seventy miles distant. She was escorted to the train by her daughter and placed aboard. After the advice was given and the good-byes said, the train moved on. The old lady became uneasy and when the conductor came around was very anxious to know if they wasn't most down to Po'keepsie. Oh, no, he says, I'll let you know when we get there. But the old lady's uneasiness increased very rapidly. She became nervous and almost uncontrollable, and every time the conductor's head peeped through the door the old lady's eyes were on him, with motions and gestures, beckoning him to her side, inquiring if there weren't bridges to cross that were dangerous. And she was awfully afraid they would meet some train and have an accident, and they were running so slow. It did seem as though we would never get there. Of course all this was fun for the passengers, who were being highly entertained. But finally the whistle blew, the conductor went out, the train stopped. It was "Po'keepsie." There were many passengers getting aboard, which caused an unusual delay. It irritated the conductor so he had forgotten the old lady. But by the time the train was under good headway and the conductor got inside the door where the old lady saw him he came to his senses. He grabbed for the bell rope, signalled the engineer to stop and back up to the station. By this time the old lady was frantic, bobbing up and down in her seat. The conductor approached her and says: We are at 'Po'keepsie" now, you can get off. Oh, no, she says, my daughter told me when I got to "Po'keepsie" to take a pill. I want to get off at the next station beyond!

In returning to the field again we find it has attained a fine growth. It is all tasseled out, and has been kept clean by running the cultivator through it each week. The crop covers the ground so that nothing can grow to injure it and will now take care of itself. At husking time we go in and gather for our harvests, "if a favorable season," 160 baskets, if unfavorable, 120 baskets per acre. If the farm-

ers make a success, and the products are increased, the public, and especially the capitalists and combines are notified and make their arrangements accordingly, to look out for their share of the profits (it too often happens that their share is the largest.) But the farmer is very generous and can feed them all.

If, on the other hand, the yield does not come up to the desired expectation, there is no lack of causes to be found. It is only a few years ago when the average yield of corn for Wisconsin was only some 22 bushels per acre. In 1888, 26½ bushels per acre, which shows a steady increase, and in 1889, still increasing, reaching over 29 bushels per acre. There was last year (1890) in Wisconsin, 1,016,344 acres of corn planted, an increase of 3 bushels per acre on that amount would make an increase of 3,049,032 bushels. At 40 cts. would bring $1,219,612.80. These figures may look large to you, but they are correct, and show the steady advance in amount of crops and consequent profit that results from a careful and systematic study of the conditions that make good work possible.

Let us make the most of the opportunities offered us for discussion of our common interests in meetings like the present, and especially our Farmers' institutes and other meetings of a kindred nature, keeping Wisconsin ever in the front rank of progressive farming.

DISCUSSION.

Mr. Fish — I want to ask the gentleman what time in the year he would prefer to plow, preparatory to the planting of corn crops; whether in the fall or spring. If in the fall, at what time in the fall, and at what depth?

Mr. Sisson — I have always had better success in fall plowing; early plowing in the fall. Three or four inches deep.

Mr. Steele, of Lodi — I would like to ask the gentleman how many stalks he grows in a hill?

Mr. Sisson — If we can average three stalks in a hill, we think it abundant.

Mr. Steele — What variety of corn?

Mr. Sisson — It depends upon what you wish it for.

Mr. Steele — For feed.

Mr. Sisson — My experience has been it is better to use a yellow dent variety, with small cob.

Mr. McKerrow — I would like to ask the gentleman if location and soil would not have a great deal to do in choice of variety. What might be good in one locality, might not in another.

Mr. Sisson — I think so.

Mr. Emerton — Would not the soil have a great deal to do with plowing? I find in plowing down clover crop on my soil, which is light, the larger the growth of clover and the later I can plow the soil, the better crop I have.

Mr. Sisson — That is a matter better decided by the persons themselves on experimenting. I never had anything to do with very light, porous or sandy soil. I presume that on soil of that kind spring plowing would be more beneficial.

Mr. Lawton — In husking my corn I have noticed about one-fourteenth of the stalks were smutty, which we know is detrimental to the crop. Do you know of anything that will prevent the smutting of corn?

Mr. Sisson — I do not.

Mr. Goodrich — Which is the most likely to prevent the ravages of the cut-worm — fall or spring plowing?

Mr. Sisson — Well, I have noticed cut-worms in both fall and spring plowing, especially in old pastures. They are not so apt to work in late plowing of pasture; I should prefer the fall plowing.

Mr. Goodrich — My experience has been that late spring plowing for sod ground would be better than either early spring or fall plowing.

Mr. Bell — Would you plant your corn early or late in the season, so prevent grubs?

Mr. Sisson — My practice has been to plant corn as early as I could and yet feel safe. I have planted as early as the 26th of April, as late as the 15th of May. In each case I have had good crops.

Mr. Bell — What time did you use the harrow?

Mr. Sisson — I harrow soon after I get through planting; keep going until you can see the rows. I do not drag the corn after I can see the rows plainly.

Mr. Youmans — In planting do you use the whole ear, the tip end or base of the ear¿

Mr. Sisson — In shelling seed corn we always have made it a practice — it helps in planting — to get the kernels as uniform as possible. You can plant more regularly than if you shell off the tips; they would grow as well as any part, but you do not get an even stand, so we have made it a practice to shell off the tips of the ear, and large kernels at the butt end.

Mr. Noyes — I would like to say in regard to planting early or late to guard against cut-worm, that I find from my observation and experience if you plant it the first days of June, some early corn will ripen, and the chances are the cut-worm won't hurt it, it is too late, they have got their growth. I have noticed that nearly every year for the last ten years.

Mr. Norton, of York — I planted a dozen or fourteen acres of corn, three years ago, and the worms ate it all up. I planted it about the 20th of May, and I dragged this ground thoroughly, and then replanted it the 6th of June, and I got a splendid growth.

Mr. Bender, of Oconomowoc — A second crop of clover, plowed under in the fall, and thorough cultivation in the spring, is the best preventive I have found against cut-worms.

Mr. Sisson — I would say, that I never have had any trouble with worms on clover sod, if plowed in the fall.

Mr. Jones — When do you recommend gathering the seed corn, and how?

Mr. Sisson — My practice has been in gathering seed corn, to gather it at husking time. You can have a better selection of ears. You can get it to grow just as well to pick it before, but I do not think it will do any better, if you husk in proper season. I have corn that I have kept planting

for the last eighteen or twenty years, and it is better corn to-day than it was when I got the seed, and yields a good deal better.

Mr. Coke — I would like to ask the gentleman, if he advises changing seed from one climate to another?

Mr. Sisson — My answer would be, to find out what corn is best adapted for your location, and stick to that kind of grain.

Mr. Noyes — Should I understand the gentleman, that by selecting one kind of corn, and sticking to that kind, he means he would save his own seed, from his own soil, continually; or would he send off and get that same kind of corn from a distance?

Mr. Sisson — From my own field. I do not like to trust any other person's seed; I never had good success with it.

Mr. Scoville — Did you say the yield of corn in the last year was in excess of other years?

Mr. Sisson — We have not the reports yet of 1890. We have the acreage, but not the yield.

Mr. Fish — Do you prefer plowing sod in the fall and sowing it with wheat, to having a crop of wheat sown first; or would you put the corn in as the first crop? Would not sowing the wheat crop last prevent the ravages of the worm to a certain extent?

Mr. Sisson — It might do so, providing a person wishes to raise wheat?

Mr. Sherlock, of McFarland — In the spring of 1885 I had a sixty-acre sheep pasture which had been used for sheep for some four or five years. Thirty acres of it was plowed in October, and the other thirty in April, as soon as the frost was out so as to permit plowing. I noticed in the last of it that was plowed, quite number of grub-worms and small gray cut worms. I had an Englishman to work for me as a farm hand, and he told me that in England lime and salt was a sure preventive to all cut-worms and surface insects. I did not have the lime at hand but I had the salt. So I sowed broadcast a barrel of ordinary salt on about three acres of the sixty and harrowed it in the day before planting. The corn all came up nicely, and I don't

know as I ever saw a more even stand of corn; but when it was putting on the fourth blades of leaf, the grub and cut-worms commenced their ravages, and in three days I don't believe there was a hill to the acre left on the fifty-seven acres that I had not sowed the salt on. On the three acres I had sowed the salt on I don't think they took five hills to the acre. I am convinced that it is a sure preventive.

Mr. Scoville — My experience in regard to using salt has been that the cut-worm got up through the soil as readily as if no salt were there.

Mr. Beaumont — My experience has been that it is best to plow the sod as late as possible in the spring.

A member — My experience bears that out.

Another member — Mine does not.

Mr. Davenport — In Waushara county we have had two crops taken by cut-worms when the ground was plowed early in the spring; plowing later we have good crops of corn. We do not have any trouble with the cut-worm when corn is planted the 6th or 8th of June.

Mr. Utter — Farmers are quite apt to jump at the conclusion who try salt in one season, and the worms don't bother, that that is the reason. Perhaps that is not the reason. Another man's experience shows that late plowing prevents the ravages of the cut-worm; perhaps the cut-worms were through their work before the late plowing, as generally cut-worms do not work largely after the first of June. Late plowing shows then to be the best because the corn is planted later, and at that time the cut-worms are through. As a rule they don't work after the first of June.

Mr. Goodrich — I have had some experience of my own. I had a piece of ground that I wished to plant to corn. I plowed one-third of it in the fall, one-third of it I plowed in March before the rest of the ground was fit to plow; the rest of it I plowed about the 20th of May, and it was all planted together. That which was plowed last had no cut-worms, that plowed early in the fall was about half destroyed and that I plowed early in the spring was nearly all destroyed.

Mr. Smith, of Beaver Dam — For a number of years I have never failed to have some trouble with the cut-worm on sod ground, I don't get but one-half of the crop. If I was going to advise my neighbors about sod ground, I would advise to put barley with this corn on sod ground. That has been my experience for a good many years.

Mr. Sampson — I have had some experience in sod. In one field I plowed part of my sod in the fall, part of it quite early in the spring, and by reason of drawing stone and clearing up the rest of it, the last I plowed quite late. I sowed part of it to oats reasonably early. There came a rain that spring and put my work back, so I sowed some more oats after the rain. The rest of the sod I put in corn. I got a pretty fair crop from the oats that I sowed early; those I sowed later were entirely destroyed by the grub, and the corn was entirely taken out, alike where I plowed in the fall, early in the spring and late. I found that more than at any other time, grubs worked in damp weather and warm nights; that is when they did the damage. So far as the season is concerned, I do not think any set season can be determined when they will work; it depends a good deal upon the weather. They like barley; I think they will cut barley as quick as corn, exactly.

Question — Do you mean the white grub or cut-worm?

Mr. Sampson — I don't know which, they did the work just the same.

Mr. Everett — It seems to be the opinion of this audience that grub worms work in clover sod. That is something new to me. They work with us in old pasture and timothy sod, and clover where it is left down long, and I think the best remedy is not to keep clover down so long.

Mr. Jones — You answered the question I wished to ask. Up in our country, north, my experience has been that we are not troubled with cut-worm and grub in clover. It is our experience that they work in timothy and old pasture.

Mr. Eastman — I know of a piece of corn, planted last year, where the sod had not been down but one year, and the grubs ate three-fourths of it.

Mr. McKerrow — I had corn planted on old pasture and

clover sod last year, on old pasture the cut worms did no damage whatever; they did little damage on the clover only down one year.

Mr. Emerton—I would like to ask these gentlemen if the clover had not manure turned under, which set the grubs to work in clover sod. Wherever the grubs works it is where there has been a dressing of manure; the grub comes from the barnyard and cuts the corn.

Mr. Eastman—I can only say I do not know what causes the grub to work; he got there just the same and ate up the corn.

Mr. Ames—A year ago last December we turned under fifty acres of sod in an old sheep pasture, and the cut-worm did not touch it. Right beside of it we turned over sixteen acres in the month of May and planted it; we got but a very small crop, scarcely any. My idea is that the best time to plow sod for corn is very late in the fall, turn out the grubs and freeze them up.

The President—We shall have to close this discussion and take up the next paper.

HOW TO RAISE POTATOES.

By George Martin, of Hudson, Wis.

Potato culture, like all branches of agriculture, has to be learned. I have been growing potatoes for several years, from ten to eighty acres per year, and it is what I do not know about growing them that troubles me.

Necessary to the production of a good yield of potatoes is good soil, good seed, good cultivation and having them well protected from bugs.

Nearly all soil in this state can be made to produce a good paying crop of good potatoes.

Our much exhausted soil must be regenerated before a good crop can be grown. I have tried different methods and find barnyard manure the quickest, best and surest way of preparing land for a potato crop.

Clover sod is good. Clover sod and barnyard manure are better. Timothy sod is not good. Do not plant the same piece of land twice, my experience having been more trouble with bugs and more liable to scab.

I prefer to plant in drills thirty inches apart, five to six inches deep, and ten to twelve inches apart in the drill.

Seed to be cut to one or two eyes, and not too small. Potatoes for seed should not be allowed to heat or sprout. Move them or turn them, which will prevent sprouting. Temperature of storage room for all vegetables should run thirty-two to thirty five degrees. Keep a thermometer in your root house. Cut seed one to two days only before planting, as much seed fails by being cut, piled or sacked.

I plant with the Aspinwall planter, which makes its own drill, and does its own marking. Plant or make rows perfectly straight on account of ease in cultivation and sprinkling or bug killing, as well as looks. To me it is a pleasure to see a neat, clean, straight planted field of potatoes, or any other crop. I use three 1,200 pound horses, and a good man. The machine does perfect work. Roll the ground immediately after planting, to pack or firm the dirt that the soil may be kept moist. Never open drills ahead of planting. Kill all weeds by repeated harrowing until the plant is visible, then cultivate, turning the soil to the plant. Harrow and cross harrow; keep weeds down by repeated cultivation until the plants begin to blossom. Cultivate level and hand pull all weeds left, which costs me about $1.25 per acre. Potatoes and all hoed crops should be clean and free from weeds as it pays at harvest time, and for future crops that are to be grown on the land.

Bugs must be kept off as the full foliage is vital to the plant. Two pounds of paris green to six barrels of water, applied to plants when dry, will destroy bugs in from one to three applications, as the case may require. It is much easier to destroy them when first hatched. I use a six barrel tank. the teamster sprinkling two rows at a time and a boy to stir to keep paris green from settling.

Most of bug killing can be avoided by heavy fertilizing and late planting, and much labor can be saved in destroy-

ing weeds by late planting. Do not plant until the ground is warm that the plant may come up vigorous and strong; it is the small and slow of growth plant that is destroyed by bugs.

Some years since I asked Mr. J. M. Smith what he used to kill the cabbage worm, he replied nothing, and said, I force my cabbage so that the worms cannot harm them. This led me to try the same method on my potatoes. Last season I did not use ten pounds of paris green on fifty acres. The year before not any on the same amount of land, on land adjoining me, they used 100 pounds on fifteen acres.

I plant for winter use from June 10th to the 20th. My best crop last season was planted the 27th of June, on clover land, well manured. I harvested on this piece 225 bushels per acre, early varieties being used, of course, in all late planting.

Dig when ripe and not until ripe. Potatoes are not ripe or fit for market when the skin will ruff in handling. Green potatoes are not profitable to the grower, the buyer nor the consumer. Our prices are badly demoralized every season by the green stuff sent to market.

As a rule sell from the field when dug. Avoid the commission man as you would a pestilence. I dig with the Hoover & Prout machine, drawn by six good-sized horses, which leaves the potatoes clean in the row and the land in perfect condition for the next crop. Assort from the ground, picking nothing but good-size table potatoes. There cannot be too much said about the assortment of potatoes for market on most farms That anything bearing the name of potato must be sold is a great mistake. The second picking, about one-fifth with me, will make, when assorted, good feed and seed. The above first assortment will bring more money in any market than the whole crop. In short, offer for sale such as you yourself would buy.

Agriculture, like all other branches of business, has by necessity become a science. The time for haphazzard go-as-you-please farming has passed. Close, careful attention with much study and good figuring are necessary to success. No more guess work. No more wheat growing, be-

cause you have been growing wheat for thirty years, nor because the signs are that the season will be cold and wet, not favorable for chinch bugs, which, by the way, I consider a blessing instead of a curse to the general farmer, thereby forcing him to abandon unprofitable crops. Diversified farming must be taken up at once, now, this coming season, not wait until we are driven from our farms and homes. Form new plans for 1891. Tell your family, tell your neighbor, that you are going to produce a little of everything. Keep a few cows, hogs, sheep, chickens and turkeys; raise a few choice colts, grow a few acres of onions, cabbage, beans and potatoes, which I, from experience, can assure you will materially change your general appearance and your bank account.

DISCUSSION.

The president — This subject is open for discussion; questions or remarks are in order.

Mr. Snow — I would like to inquire in regard to seed. Do you plant the seed you raise yourself year after year?

Mr. Martin — I have planted the present seed, to which I refer, from seven to ten years, I could not tell you just how long.

Mr. Smith — How do you cut your seed?

Answer — Generally cross-wise. I have run across a snag just now.

Mr. Smith — Do you plant the seed ends?

Mr. Martin — Yes.

Mr. Smith — With the rest or separate?

Mr. Martin — I do not separate.

Mr. Smith — Do you quarter a good sized potato?

Mr. Martin — But one or two eyes, regardless of shape.

Mr. Smith — What part of the state do you live in?

Mr. Martin — Northwestern part, St. Croix county.

Mr. Smith — You have a better potato country up there than we have.

Mr. Martin — We have a good one.

Mr. Smith — Ours is a heavy soil, a good deal of it clay.

The president — How many acres of potatoes do you raise?

Mr. Martin — Fifty acres last year, about 10,000 bushels.

Mr. Smith — About 10,000 bushels.

Mr. Martin — I would say that my experience is that I get from fifty to seventyfive bushels more per acre planted late, than early, I planted the early variety, Rose and Hebron, for the last three years entirely Hebron.

Mr. Smith — Our experience is we are more liable to get caught with dry weather in August, planting late, than if we planted early; most of us plant early, and I think those that plant earliest are the most successful.

Mr. Martin — It is the other way in our locality.

Mr. Smith — Perhaps you are not liable to dry spells.

Mr. Martin — Our dry weather comes mostly in June.

Mr. Smith — How much seed do you use?

Mr. Martin — We use about ten bushels of seed per acre.

Mr. Smith — Would you invariably plant in drills instead of squares?

Mr. Martin — I would.

Mr. Smith — More than one year in succession upon the same ground?

Answer — No, sir.

Mr. Smith — Have you tried that?

Mr. Martin — Yes, sir. I would say in answer to Mr. Smith's question that two years ago I planted 160 rods long. A small portion of that 80 rods had had potatoes on the year before, and those potatoes yielded equally as large, and perhaps a better yield than any other, but were very scabby.

Mr. Smith — I know of one man who, to my surprise, has had a small piece of land planted with potatoes year after year. Last year I asked him how many years he had planted that piece in potatoes. He told me that he had planted it 17 successive years with potatoes, and the most of the time I know he has had fair crops. I have had his potatoes and sold them for him. It was a new thing to me.

Mr. Bell — What do you call late planting?

Mr. Martin — June 10th to 27th. I usually cut my potatoes crosswise; in planting the seed end, and I would split the seed end.

Mr. Utter — My experience in raising early potatoes is, we cut our potatoes commencing at the low end, from the high (eye) towards the low end, towards the center; we cut diagonally, commencing at the low end, and continuing around; then as we reach the seed end we have a larger piece of potato than if split down through the seed end. It is claimed that those rootlets if cut in two, there is less nourishment than there is if you leave them as long as possible.

Mr. Noyes — I understood the gentleman to say that clover sod and manure would be better. How soon before you plow the clover under do you put the manure on?

Mr. Martin — A very good rule, I think, with all farmers, is to put the manure on the ground when they have got the time. I began putting the manure on in the fall, worked at it all winter and such times as I could up to planting time, but found the best crop where it was spread first. I began plowing the 12th and finished the 26th of June. The clover was so heavy I could not plow it in; I had to roll it, and put on a chain also to plow it in.

Mr. Noyes — Another question: I presume you cut the seed in that shape for the convenience of planting with the planter?

Mr. Martin — Yes, sir.

Mr. Scott — Did the gentleman say he planted with an Aspinwall planter?

Mr. Martin — Yes.

Mr. Scott — That cuts the seed, does it not?

Mr. Martin — No, sir.

Mr. Scott — The one used in our neighborhood does.

Mr. Martin — That must be something new.

Mr. Scott — About the use of Paris green. You say you had a six barrel tank, and that two pounds of Paris green was sufficient for six barrels of water?

Mr. Martin — Yes, sir.

Fertois and Louis, Property of H. A. Briggs, Elkhorn, Wis.

Mr. Scott — It don't take as much to kill them up in the north part of the state then as it does here. I know that won't do it in Columbia county.

Mr. Fish — In planting do you pay any attention to the number of eyes?

Mr. Martin — One to two eyes.

A member — I understood that the gentleman said that he used the seed end and planted them separately.

Mr. Martin — I did not say so. Please repeat the question.

Same — I understood you to say that you cut the seed end in two, and planted them by themselves.

Mr. Martin — No, sir, I said I cut crosswise in cutting the seed, and then split the seed end. There are many more seeds on the seed end.

Mr. Scott — How many rows does your planter cover?

Mr. Martin — One.

Mr. Scott — At Rio we have a sprinkler that covers four rows, but it is more expensive.

Mr. Martin — I have had good results from fall plowing, but still I like spring plowing better. I will say further, I like to turn my manure and have it rot; I like to have it put on anywhere after harvest, through the winter, and let it lie and rot into the ground, and plow as late as I can in the spring before planting.

Mr. Linse — With reference to the time of planting; with us at La Crosse early planting nine times out of ten produces better crops than the late planting of potatoes.

Mr. Scoville — I used to put about a spoonful of Paris green to a pail of water, it don't injure the vine. I had an extra good crop of potatoes this year, large ones, and I always plant my potatoes the first thing I do.

Mr. Clark — How deep would you plant?

Mr. Martin — I like deep planting. Five or six inches.

Mr. Clark — Do you prefer level culture, or to hill?

Mr. Martin — I prefer to cultivate level.

Mr. Scott — How do you dig your potatoes?

Mr. Martin — With the Hoover and Prout digger, drawn by six horses.

Mr. Clark — Are you troubled with rot?

Mr. Martin — I am not.

Mr. Clark — We are with us, very much. We would like to know the preventive if we could, from some one.

Mr. Scott — In Columbia county if six horses had to be used it would be very expensive, that is the objection to that style of digger. They have a digger running with two horses this year that has proved very successful, manufactured in New York. Does yours take up the potatoes?

Mr. Martin — No, it leaves them in narrow rows.

(Discussion closed.)

The President — To-night at 7 o'clock the Short Horn breeders will meet in the agricultural room, the Jersey breeders at 7:30 in the office of the dairy and food commissioner. At 7:30 o'clock we will have the regular session in this place, and stand adjourned until that time.

EVENING SESSION.

WEDNESDAY, February 4, 1891.

The president in the chair.

The president calls the meeting to order.

The President — The exercises of the evening will begin with music by the University Glee Club.

President — The first address will be

ANIMAL DISEASES AND THE IMPORTANCE OF NATIONAL INSPECTION.

BY DR. PARSONS.

Mr. President, Ladies and Gentlemen — Of course you were not looking for me, and still I am here, and I feel very highly honored indeed to be counted worthy to proceed to the state of Wisconsin, under orders of the department of agriculture at Washington, to meet the farmers of this great state; and I feel that honor is somewhat enhanced from the

fact that I am to meet the farmers of this state to which I belong, because, wherever I go, I hear the name of Wisconsin. I am traveling from state to state in the interest of the bureau of animal industry at Washington, meeting the farmers here and there in their conventions, and no state anywhere is spoken of as is Wisconsin, in an agricultural sense. Hence any man should be proud, if he is on the wing, to hear the name of his own state mentioned so often and so favorably. Whatever may be said of your state, my friends, in an agricultural sense, it is something in this way: "Whatever Wisconsin tries to do in the way of agriculture, she does with some degree of force, and some degree of success. Wisconsin is spoken of for its experimental station—is lauded to the skies—in every state where I have been. You would think that every state in the Union wanted to steal Prof. Henry. In fact, in one state they said the only thing they had against him was that he would not come to Iowa to live. Well, go to the experimental station and look through it as I have, and you will decide there is no experimental station like it. It is in the direct line of agriculture, of animals, and the things you want to know about. And we can still further be proud of Wisconsin, because they say the same thing in New York, in Iowa, in Indiana, in Ohio and so on. In some places where they have no such thing as a farmer's institute—in Iowa for instance—the Stock Brokers association passed a resolution, appointed a committee of three sharp men to press upon their next legislature the importance of establishing farmers' institutes. They did not stop there, but "after the manner and methods of Wisconsin." Indiana talked the same way. Ohio is pushing for one something after the same manner, and saying they are trying to get one "after the manner and methods of Wisconsin;" and that Wisconsin has such laws for the suppression of adulterated foods and such things, and they want laws on that subject like Wisconsin's. So you can see why I am proud of Wisconsin, and feel honored to be able to speak a few words in regard to the department in which I serve.

My friends, there is more to your department—I say

"yours," because it belongs to you — at Washington, than you are aware of. I cannot stay to talk much, because the President warns me there are three papers to follow, and some one may be so foolish as to ask me some questions when I get through. But the idea seems to have gone abroad — through some contentions that have arisen, on account of experiments and tests in the department—that there is nothing in the Agricultural Department but seeds and vegetables. There is but very little of it, and if there were less seeds it would please the Secretary better; and if we knew more of the hog cholera, we would feel better.

I want to talk with you to-night in regard to animal diseases. Not that I propose to define them very accurately to you, but hope to say something that will interest and put you on your guard as farmers, and bring before your minds your individual duty, so that we can better hedge in and stamp out the diseases which have destroyed so many of your animals.

You are aware, of course, that it was once a very feeble institution. By your prayers, the prayers of the farmers, it has been made a department. The head of the department is a cabinet officer. Your mouthpiece is close to the chief executive; he has force and power there, like any other cabinet officer. Hence you have gained great strength in being raised to that condition. Now, certain things had to be asked for; certain things were asked for, and they were received. That is, appropriations for carrying out certain things — a re-organizing of the whole matter; dividing each thing up into its own proper division, more so than it was before; securing useful reports and placing them in proper condition for publication; editorial work, and all that. This has been carried on quite successfully. The chemical department was right under the Secretary's office, giving him all the fumes arising from it. They have had to hire a building, and get out of that, and every thing is much cramped; but appropriations were made to enable the Secretary of Agriculture to stamp out contagious diseases among animals. Some of you know the history, undoubtedly, of the work which followed.

The officers, and the force given to the officers of the Bureau of Animal Industry, proceeded to the large cities, —the great stock yards of Chicago, New York and Baltimore—and had a free fight over the whole matter; but the object was to stamp out pleuro-pneumonia. First, they commenced with some opposition, but all that disappeared. The Secretary did not stop to see how the law read, except that there was an appropriation for him to stamp out certain diseases, and he thought the best way was to go to work and stamp them out; so he purchased all that he could find, or seized them, and destroyed and paid for them. The result is, that there has hardly been a case of pleuro-pneumonia for one year past. All that remains of it is a little in King's and Queen's counties, in the state of New York—one or two cases last August. We are getting it almost entirely under foot. That is enough to say about that. It simply shows what can be done when authority and money are given to carry out the proposed object.

Texas fever, you know, created great fear of the cattle of this country. Nobody dared to buy cattle in the stock yards to take home.

We can now say, "You must ship nothing only so and so. You must separate those cattle and quarantine them." They found out it was the best thing to do. Why? The disease comes from a tick, the tick falls off, and these cattle separated found immunity from the disease by this very separation and quarantine for a certain number of days. The cars that ship western cattle to Milwaukee, Chicago, Indianapolis, were forced to go into quarantine, to be thoroughly cleansed, every car, and limed and disinfected before they dare to go back for more cattle. The railroad companies fell into line admirably, they were willing to quarantine, except one railroad that objected, but they fell into line also. What has been the result of this work? The result is, you can buy cattle in the stock yards safely. The percentage of insurance, which was eight and ten cents on valuation of stock for shipment and importation, has fallen to three and three and one-half per cent. Insurance companies are willing to insure that low

on account of the safety which prevails now. But in order to secure this, inspectors have been placed at every point of export, skilled veterinarians to examine all the herds that come, declare them to be sound if they are, at Buffalo and other places, before they are put aboard ship, and these that come from Buffalo are again inspected at Boston; then there is a brass tag put into the ear of every animal, numbered, and he goes to Europe tagged in that way, so he can be traced to the very farm he comes from.

England had a law that all cattle shipped to her ports from America, must remain on the wharfs ten days in quarantine, and then be slaughtered. That was an uncomfortable condition for us, because cattle under those circumstances might show signs of fever, and still not be diseased with any contagious disease.

There is a skilled man to classify and label, skilled veterinarians to inspect the slaughtered cattle, and they found there was no pleuro-pneumonia coming from this country at all. The result has been that England is on the very point of lifting the embargo, and admitting American cattle. Wipe out the disease, we urge upon you, and open the markets, and they will be open to us when it can no longer be said there is contagious disease among us. They want our cattle, and they will soon begin to take them again without hesitation. Further than that, the secretary of the treasury, and the secretary of agriculture, were granted the privilege of fixing the points where cattle could be imported into this country. They fixed them; had a veterinary inspector appointed for every one of those points, so that all cattle coming to this country must be inspected before they can go into the hands of the customer. They must be certified they are sound before they can be landed. There are other arrangements of quarantine to shut out from this country diseases from other countries that may not have been started yet. England has said something she never said before in regard to the United States, I think. I don't know that England ever admitted that we did anything better than she did. She admits we have stamped out pleuro-pneumonia, and she can't do it. And this is of

great importance to the farmer. I do not want to try your patience, but I want to have you rivet this in your minds, because you have demanded and received from the national government and our legislature a department which is your own. Give it a dignity and a force that will enable it to do something for you in the direction I speak of.

So much for pleuro-pneumonia. I could give you some history of the study of Texas fever that would interest, experiments at the Station, but I have not the time. Now, my friends, what comes next?—and I have to be brief. If there is a disease among your herds of any kind, that is so vicious, so terribly contagious, that you walk across your neighbors' fields where his herd is sick with this disease, you can carry enough on your shoes a number of miles to give it to all the like herds, your own and your neighbors', through whose fields you pass; that your dog can carry enough of the virus to affect all the herds he may approach. This disease can be communicated hundreds of miles to your herds through cars not properly cleaned. Shipping stock from Iowa and Illinois, for instance, and going empty to the northwest for more stock; or, not willing to send their cars empty, they perhaps have an opportunity to send lumber to some small town, and they load these cars, uncleaned, with lumber, and some farmer buys that lumber and builds for himself a fence, and his herds are infected. If there is any such disease as that, and if you can be made to believe that by your own efforts largely, such a disease can be suppressed and held down by the head of the department and its force, and your help combined, certainly, I think, you will be willing to assist. Such a disease is a thing they call hog cholera. And that is the way you get it. I have traced a number of cases about this community; in almost every instance I have traced it right to the car. Mr. Prince, of Iowa, the large swine breeder and prize winner, took some hogs to Illinois, and took all the premiums. He went home, and one or two hogs he put put loose in a car used for shipping hogs before carried home the hog cholera. He lost 200 prize hogs worth $4,000 Now Mr. Prince did not do as most farmers do. I want

here to give you your lesson. He was applied to by a soap-boiler for those carcasses, and offered several hundred dollars for them. "No sir," he says, "I have lost $4,000, I have had to return that sent to me in advance, and the orders I have taken. I have taken it out of the bank and sent it back again. I will bury those animals as deep as a long handled shovel will put them, bury them in lime and earth, and disinfect those premises with lime for one complete year; but if I have to break up and go to the poor house, you can't have those hog carcasses to cart them around the country." Now my friends, from this instance, you see the remedy for this disease before you. This is the disease we are combating now. You may hear there has been found immunity against this disease. Well, believe it, if you want to. You can look over the records at Washington; you find that four years ago it was supposed that by inoculation immunity was found against this disease. It costs so much you had better kill your hogs and throw them away than to use it. Search is being persistently made for something, but I have not heard, and I have been investigating, of any thing, inoculation or anything else, which has succeeded. We have had reports of success — I wish it had been a success, I wish I could hear of the farmers that have tried it in Kansas could come forward and say: "Yes, it is a success." But we cannot find such reports; cannot find men willing to say that it is so. And the reason is obvious. It is all clear to those who study this disease.

Ir is a germ, bacteria, and they who study this disease know what it is, and how it acts; but, my friends, there is something further than this. Some of you have heard of the contention in this country as to whether it was one or two diseases. The bureau of animal industry claim there are two germs and two diseases. Experiments have been going on, and now it is established as a fact beyond contradiction, that the two germs are there, one found only in the liquids, the one is active, the other simply vibrates; but when they inoculate a rabbit in the evening with the one they call the swine plague, he will die the next morning

every time; with the hog cholera germ, he will live about seven days.

The Experimental station at Washington has two fields operating with the two diseases; they are quite distinct, one would represent pneumonia, the other typhoid fever; it is called typhoid fever in the old country by the English reports. In hog cholera the lesions are in the intestines, in the other in the lungs.

That is where you stand to-day with these diseases, one as destructive as the other. The further north you go the more liable we think you are to have, not real hog cholera, but the other, the swine plague. It is all called hog cholera because hogs, when they get sick have some symptoms that are always alike. The further south, the more prevalent and the more destructive is the genuine hog cholera. What we want to do, and why I am talking is just this: I want every farmer to remember that he has something to do in the premises. We want authority given to act on all things at all inter-state, that we may be able to stop the transportation of this disease from one state to another; to insist upon all cars being quarantined and limed, and disinfected at the places where the hogs are delivered, whether sick or well; and that the cars used for shipping hogs shall not be used for any other purpose until they are cleansed. You ought yourselves to get together and insist that your own state pass a law to make it a misdemeanor for you, yourselves, to sell the carcasses of one single hog that dies with disease of this kind. You ought to do it for your own safety; and thus you begin to hedge it in. Bury the swine that die; cover them with lime, then with earth; then put lime all over your premises wherever the hogs have been, and keep hogs away from there a year, if you want to be real safe. In one or two turns of the wheel you can have this disease all wiped out, I mean annual turns. You will have this disease where we had pleuro-pneumonia. The question arises, do you wish to do it?

Now, in regard to sheep, and sheep scab, the same sort of business is going on, not stopping to think that you spread the disease yourselves, undoubtedly without knowing what

you are doing; but inasmuch as you have a department, and that department's whole and sole and entire business is to work out this problem for the farmer, to assist him in this, and in all other things that will give him knowledge in regard to the animals he may raise on his farm, and how to raise them safely, we feel that it is the duty, and that the farmers will think it is a very high privilege, to so sustain the department that it shall become stronger and stronger, as it must of necessity grow larger. It must have greater scope, greater force; it must have more appropriations; it will want better buildings, for it has the meanest ones in Washington. It will want a good many things, but above all, the united support — with politics thrown to the dogs — of all the farmers in this country, and then it will move ahead most magnificently. That is what we ask. I judge from what I have seen this fall that the farmers ought to be willing to do this, and do what I have said on their own part. Resolve now, every farmer here in this state, that wherever you see anything of this kind you will put your foot upon it by these methods I have presented.

The agricultural department needs force, and is growing larger, for it has had given over to it the weather bureau, and there is talk of giving it the fish commission, and I don't know what else they will put there. It is destined to be the largest institution at Washington called a department, so far as labor goes, or that is intended for the farmer. The farmer asked for that department, the government has granted it. It has for the last 18 months done student work for the farm; and the reason we have not the prospect to-day of opening the foreign markets for our swine is because these diseases are treated with such carelessness by the farmers themselves in this country. Do you suppose that Germany will open her markets, with hog cholera running rife all over America? She is not so foolish. Nobody can blame her. She knows better than our farmers how much cholera there is in this country. She has her agents abroad studying not only such things, but the methods of agriculture all over the world. So do all

the European countries, and they never will act, and ought not to act, for their own safety, any further than we act; but the markets are about to be opened for our cattle on account of the movements made in the treatment of this disease, not simply corralling it, but carrying out all these rules until we have cleaned the country almost entirely of these diseases, and taken the danger of spreading it away, gained the good will of the markets abroad, and they are about to be opened for our cattle, and they are glad to receive them, and you need all the market you can get for your hogs, and the prevalence of these diseases was the only reason for closing foreign markets; it is no retaliation or anything of the kind.

That is all I need to say, but I wish to enlarge a little. You not only have this division of animal industry, but that of chemistry, silk culture, fibre culture, diseases of plants and so on, all entirely separate divisions, with a skilful man at the head of each one. They are trying to find out the different productions of all the world, what America raises, where she raises it, where she can sell it; what the markets are, and keep you posted. It will be of great value if you appreciate it. The fibre division is looking into every fibre plant that has any probability of growing in this country, trying its worth, the latitude in which it can be raised, what climate it demands; and they are forging ahead with good prospects of bringing about good results. Again, the chemical department is working out the sugar problem. And I wish Prof. Wylie could show you his processes, inasmuch as they show Wisconsin is going to be a grand state for raising the beet, and Prof. Wylie knows just the territory in which they grow, which produces the largest amount of saccharine matter, and he tells you how to plant, how to weed, and then how to cultivate and gather, and all about it, and then how the sugar is made, and shows you the machinery. Before the year is up there will be large sugar beet factories for making sugar from beets, that will have the capacity of working up the beets, one three hundred tons of beets a day. There will be six before the next year is up, finished, the one in Nebraska has

a capacity of 350 tons. The sugar is a fine, white beautiful granulated sugar, and, as the chemists says, its parts are just the same as any granulated sugar made from cane. There has been a great study to see what the saccharine beet will do. He has found out the climate, and how far north and south it will grow. I assure you if there is any department that will please you, it is this. You will probable hear this directly from the chemical department and Prof. Wylie's report, as is without doubt, a fact, he has succeeded in getting a very large percentage over and above all that has been done before; but he is a cautious man, and wants a positive thing before making a declaration.

The division of plants, diseases of plants is under Prof. Galloway, who has worked out many a problem. He goes abroad and makes his tests on trees, crab apple trees, and he has it down fine, and it is a success, and you can have his books simply by writing for them. All the books and publications are for you, write and get them. If you cannot remember the names, simply write "Secretary of Agriculture" on your envelope, it will go to the very department. Send for the new horse book, one of the finest in America for the use of farmers; send for the sheep book. Sheep owners say it is the grandest thing ever published in that line. Send for the hog cholera and swine plague book, and it will give you the remedies, which are the remedies I have been giving you—care, disinfection, quarantine. Send for all the books you want, and you will get them, and find that the department in Washington is doing something for you.

Now, I must not talk any longer, because I have not time. I could go on and say a great deal about other things, but I wished to speak directly on this point of animal diseases; and I will say that the inspection matter should be carried this much further. The department should have the authority, and that authority can only come from Congress, and Congress will act willingly, I think, if the farmers would say to their congressmen, that this thing is desired of them: "We want authority to go and inspect these great slaughtering places, to see that

there is no diseased meat either sold or canned for us to eat; and we guarantee there will be a stop to it, if you will give the authority" — and the authority is with the people of this great country.

We simply ask the farmers to listen to this plain talk, which is plain purposely. Reflect upon it, and urge upon your legislature, that something be done here to help you out; and forbid the spreading of this disease. A farmer has asked me to assist in getting such a bill before this legislature. That is not my business. Plenty of men can draw bills, better than we can enforce them. All of you take hold and say you want it. Forbid, yourselves, spreading the disease by law. Then, above all things, have a keen, sharp officer, a skillful man who knows his business, and who knows animal diseases when he finds them, to walk out under the authority of the government, and put his foot on these diseases when he finds them. The state of Wisconsin stands ahead in all these things, or has, and other states as fast as they can are falling into line, to imitate these things Wisconsin has done. Take hold and do more, and rid your state completely of these diseases. Help the general government. You will find the work done in this channel will truly cause your children to rise up and call you blessed.

The President — A few moments will be given to the discussion of the Doctor's address, and to any questions you may desire to ask him.

Prof. Henry — I would ask whether, in your opinion, the State of Wisconsin needs a state veterinarian. The question is under discussion?

Dr. Parsons — I give the farmers of the state where I go credit of being pretty bright men. As I look over the audience, I think I have found an audience of pretty bright men. In every state where I go, if they have not a state veterinarian they are talking very loudly about having one; and they say about that just as they do about the other thing — they say "just like Wisconsin." They won't let Wisconsin alone. I did not know there was any danger here, regarding this matter. I hope that Wisconsin will

bring no shadow of disgrace over herself by retracing the steps she has already taken.

Mr. James Loper — If it is in order I would like to say a few words. For my part I think it would be a good plan to have a veterinary school, to give the farmers an opportunity to know about these diseases, and how to treat them themselves. Three months in the winter would do. We find a great many times, in cold weather, horses and cattle left out, become sick, and we have to go twelve miles for a horse doctor, and our horse is dead by the time we get him. I have lost two valuable horses that I might have saved, if I had known anything about horse doctoring, so that I might have helped them myself. There is probably, in every neighborhood, a good, intelligent boy, that would like to go to such a school three or six months in the year, and then we would not be obliged to go miles to get some old horse doctor, that is, may be, a humbug when he gets there.

Dr. Parsons — I will say in response to the gentleman's remarks: Iowa has done just that thing, has a veterinary school attached to her university, and I believe that Wisconsin has had a skilled veterinarian, and he has been delivering lectures at the university.

Mr. Loper — He may be a humbug, too.

Dr. Parsons — No, he is not a humbug; because the greatest veterinary societies in the United States are honoring him with offers of positions, on account of his skill.

The President: Ladies and gentlemen, it is my special pleasure to now introduce my early boy neighbor and lifelong friend, who will speak to you about

"FIFTY YEARS BEHIND THE PLOW,"

BY T. J. VAN MATRE, OF LA FAYETTE, WIS.

Ladies and Gentlemen: We have been introduced to each other, and we see how each other look. Now, in order that we may become still better acquainted, I will tell you how I feel. I feel like the girl who fell into the molasses barrel—I feel terribly stuck up; and it is the magnificence of this architecture, and the high literary character of the ladies and gentlemen by whom I am surrounded that makes me feel so. However, I am glad to be here to-night, not because I expect to say anything that will instruct this meeting, but for two other reasons: First, the meeting of the honored president of this association carries me back in thought to our early boyhood, when he and I rambled together barefoot over the virgin prairies of southern Wisconsin, until our soles became case-hardened—I mean the soles of our feet—so that when we ran over the flint-beds so common in that region, the fire would fly until you would have thought us a continual democratic ratification meeting, or a second epistle to a 4th of July celebration; and we were democrats, born, bred and dyed in the wool, and all these long years—

The President—I don't think I want to have my politics given away.

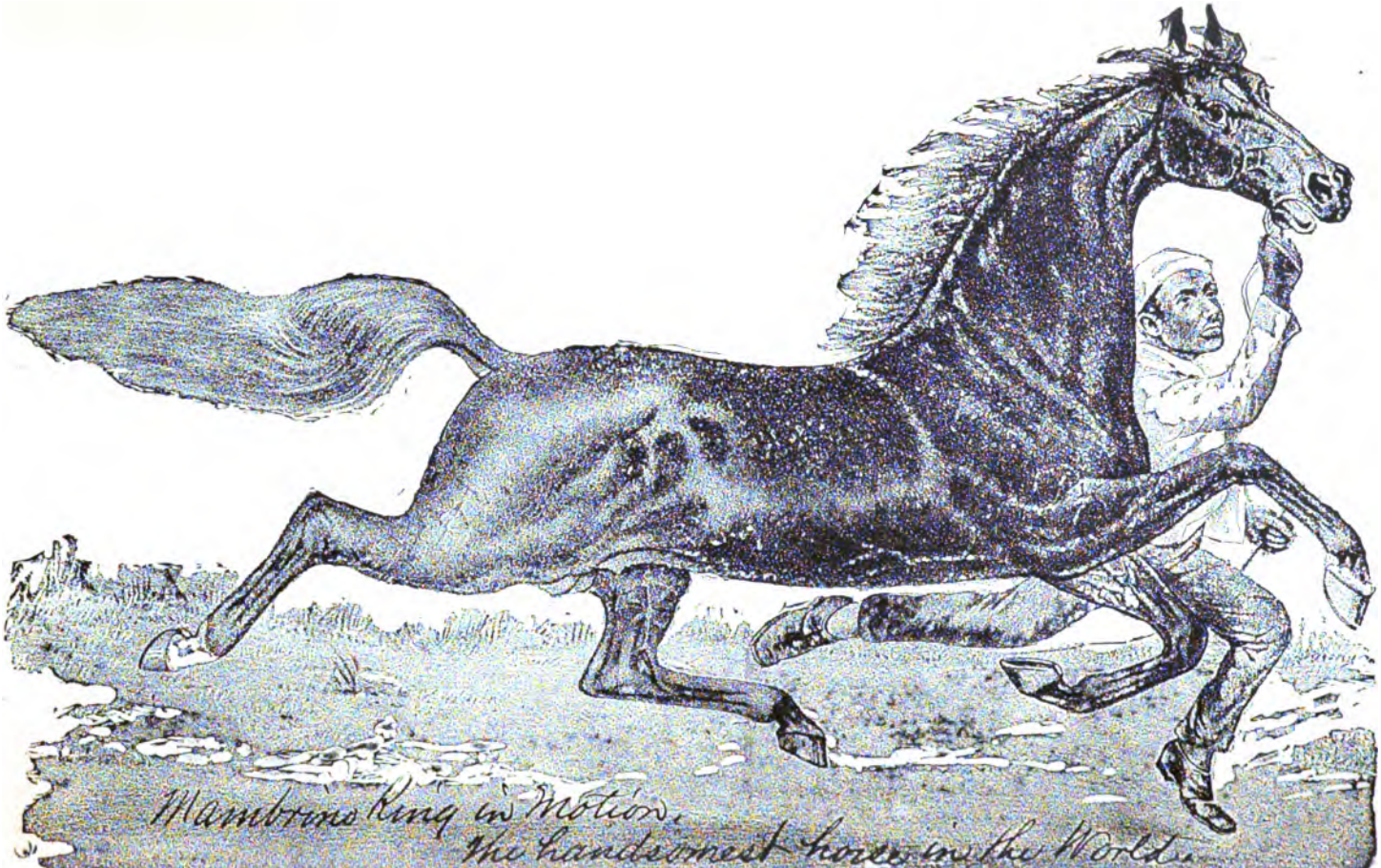
Mr. Van Matre—He has proved true to the faith. But I became long since an apostate to democratic principles and joined the Salvation Army. Now it was demonstrated last fall that a democrat may get into office, but I don't believe he will ever get into heaven. (I hope Gov. Peck and the state legislature are not present here to-night, because that might make them feel bad, and it would seem that a father who has had the ups and downs with a wayward boy that Gov. Peck has had, ought to have at least some assurance of future happiness), but the only hope that I can see rests in this fact, that the Apostle Paul might have been a democrat. You know the Savior said to him: "Saul, Saul, why

persecutest thou me? It is hard for thee to kick against the pricks." He was a chronic kicker it would appear, hence I take it, a democrat like Gov. Hill of New York. (Now I hope the reporter won't record this part of my speech, because I am looking for an office under this administration, and what I have said might militate against my own brightest prospects.)

Again, I am glad to be here because this is my old stamping ground. 'Way back in the fifties, for a number of years, I attended the State University. The jolly but eccentric Butler taught me Greek and Latin, and Prof. Sterling taught me mathematics. The old university buildings, with all their surroundings, come back to my mind to-night as vividly as if it were but yesterday. Just down on the confines of the grounds stood a low frame structure, an old barn, and upon the roof of this barn roosted a brood of turkeys. A quartette of students discussed this matter, and they came to the conclusion the only safety to this brood rested in their roosting higher; but they persisted in roosting right there. On the morning after Thanksgiving, when the flock-master came down to feed his poultry, lo! and behold! where there had been six, there were but five. One had gone up — gone up into room No. 9 in the gentlemen's dormitory — it had been divested of its feathers, the extremities taken off and poked down the register, an old army kettle had been secured, and the bird was put therein, and after four hours of incessant boiling, the fowl was taken out and discussed, and it was found to be as tough as sole leather. The quartette concluded that the bird had swallowed a box of Dr. Rhobach's Scandinavian blood-purifying pills, and there was absolutely no *bile* left in him. (Laughter.)

Mr. President, can you obtain order? (The secretary of this association when he asked me to appear before this audience, said I would be allowed but thirty minutes to get through in; but if you persist in yelling like a band of Commanche Indians, I shall have to call for an extension of time, or an indefinite postponement of this hilarity.)

Now I have forgotten where I was. Lest some of the


Mambrino King in Motion.
The handsomest horse in the World.

university students present here to-night should think to emulate the conduct of this quartette, I want to say, "Don't do it," because it does not require a very high degree of intelligence to rob a hen roost, especially if the hens roost low. When news of the conduct of this quartette reached father, he wrote for me to come home immediately. He said I had already devolved symtoms of becoming a lawyer, and he didn't want any lawyers in his family. Now, I never will tell who this quartette was. But I *will* say that Senator John C. Spooner was a class-mate of mine. But then, he was born in Indiana; he was a Hoosier, and a Hoosier would be no more likely to rob a hen roost than a coon would, and you know a coon don't like poultry any better than a preacher does.

Now, as Josiah Allen's wife says, I have "episoded" fearfully, and I will resume and begin. The Bible says I was born in 1840. I do not mean the inspired part of the Bible but the modern, chronological part, the family record, and that I was christened "Thomas Jefferson Higgenbottom Van Matre. The adenda adds I was put in a basket and placed between the handles of a plow which was propelled by a yoke of cows; and when the pangs of hunger clung me, the team was stopped and milked, my hunger appeased, and the work went on. So you see my earliest education and experience was in the direct line of the plow. Hence the fitness of my subject to-night — "*Fifty* years behind the plow."

Now I believe that I might be permitted to speak with some degree of assurance in regard to farming, because I have watched the rise and progress of agriculture in southern Wisconsin. Fifty years ago my eyes first beheld the light of day upon the same farm which I now own and cultivate. At that time Wisconsin was almost a trackless wilderness, where might be seen the smoke ascending from the Indian wigwam, and the wild fox dug his whole unscared. So you see I am a Badger born, and to the manor born. I was born and bred a farmer, and have never had the least inclination to abandon my life work or emigrate to a milder clime.

I have seen Wisconsin grow from a territory of less than 20,000 souls to a state of more than a million and a half. I have witnessed the development of her agricultural and mineral resources, until to-day, they are second to none in quality, and high above the average in quantity. I have seen the primeval forests denuded and the stubborn glebe subdued, until now, so far as the eye can reach, in the proper season, may be seen cultivated fields groaning under their weight of agricultural produce which finds a market in the most remote parts of the civilized world. I have seen the patient bovine, which was used as a beast of burden to transport the agricultural and mineral products of southern Wisconsin to the great metropolis of the state, superseded by the more fleet and agile equine, and he in turn superseded by the iron horse whose labored breathing and frantic neigh may be heard throughout the length and breadth of this great commonwealth. I have seen the educational system developed from its primitive crude form to the almost perfect system of to-day, which makes it possible for every son and daughter to receive an education which shall fit them for future usefulness. I have seen the old log schoolhouse give way to the more neat and attractive frame and stone buildings that may be seen at every cross-roads—state normal schools, seminaries, academies and colleges of the highest order, may be numbered by the hundreds. Benevolent institutions are are met with wherever their presence are required; and here and there all over this beautiful land may be seen churches whose spires pointing heavenward seem to admonish us to raise our eyes from earth to heaven, that mysterious source from whence cometh every blessing. But even in the very shadow of these sanctuaries may be found the licensed dram shop—placed there by and with the consent of the christian manhood of this land. I say, shame! shame! I have seen this deadly upas tree strike its roots deeply into the earth, and spread its poisonous branches all over this land, until its baneful effects may be traced to every village and hamlet, and its blighting influences too plainly written upon the

countenance of hopeless infancy and dependent womanhood.

Ladies and Gentlemen—You are aware there are two classes of farmers in this land, namely, the yeomanry, and the kid-glove class. The former class may be represented by Mr. Everett, Mr. Convey, Mr. Phillips and myself, and the latter class might be represented by Mr. Mitchell and the president of this association—men who have grown rich in some other vocation in life, and now follow farming for pastime; and I know how difficult it will be for one of the former class to say anything that will edify the latter class; and unfortunately, I believe, a large proportion of the audience is composed of the latter class. An eminent statesman years ago, taking a prospective view of our American institutions, said, "We must educate, *we must educate*, or short will be our race from the cradle to the grave." Taking a retrospective view of American agriculture, I say "we must educate, *we must educate*, or short will be our race from the farm over the hill to the poor house." And I do not mean that kind of an education which will enable a man to sit in a comfortable room, surrounded by all the luxuries of life, and farm upon paper; neither do I mean that kind of education which will enable the kid-gloved farmer, backed by his inherited thousands, to make farm operations a partial success. But I do mean that kind of education which will enable the hardy sons of America to buy, stock, improve and pay for 160 acres of American soil. And the most hopeful signs of an education which I see along this line is the organization of our farmers' institutes, and the endowment of agricultural colleges by the different state legislatures, and placing them under the supervision of such eminent instructors as Prof. Sanborn, of Missouri, and Prof. Henry, of Wisconsin.

There are gentlemen present at these meetings who will tell you what constitutes a true ration for your stock; others who will tell you which is the best kind of a horse to breed and raise; still others who will tell you how you can follow the golden butter tub to success. I am here and at the risk of being thought egotistical, will say something to

you about our own short-comings as farmers. Here and there all over our land may be heard ascending the cry of distress — not on account of the terrible destruction of the storm or cyclone, not on account of the extended ravages of the parasite, but on account pf the general depression in the price of farm products the consequent hard times and indebtedness of the farmer. Now, as farmers, it behooves us to inquire into this matter, and if the cause can be discovered, apply the remedy. Every cause produces an effect, but it is sometimes very difficult to take the effect and trace it back to its legitimate cause. We have hard times, low prices and consequent indebteness; but it is very difficult to trace back and find the real cause of this condition of affairs. This gentleman will say, it is on account of our high protective tariff. That one will say it is on account of the extravagance in governmental expenditures, and a third will affirm it is on account of the trust combines and railroad monopolies which infest our land. Now these gentlemen having discovered the cause would apply the remedy. This one says, change the national administration, that one would advocate the governmental control of land and railroads and the adoption of the single tax system as advocated by Henry George, and the third would say give us an equal distribution of the property. This latter class, ladies and gentlemen, is a class we want to look out for. They would rob labor of its hard earnings, spend it in riotous living and in ten years call for a re-distribution. Now I belong to a class who believe that the difficulty rests very largely with ourselves, and may be traced almost directly to our own step-stones. Go with me, if you please, throughout farming districts of southern Wisconsin — which is only an index to all of the great northwest — and mark the extreme appearance of negligence and unthrift which pervade the surroundings. You will see thousands of dollars worth of expensive farm machinery, yet unsettled for, lying in the fence corners exposed to the driving storms and bleeching suns; you will see the fences broken down, gates off the hinges, the hogs industriously cultivating the dooryard, and the low grade cattle

without sufficient food or shelter, leaning up against the fence, trying to muster sufficient strength to utter one faint protest against the inhumanity of man. Enter the home, if you can find the way despite the stables, hog-pens, wood piles and other debris which occupy a prominent position often in the front yard, and listen to the anathemas pronounced against the drudgery of farming by the parents within prejudicing the minds of the children against their life-work long before they are able to take up the burdens of life. These children from early education and force of habit become chronic grumblers, and their children become chronic grumblers, and we raise up generation after generation of grumblers. Hence the truth of the statement, farmers are as a class chronic grumblers. Last year we raise an bundent crop, and we grumbled because prices were low; this year we have sustained a partial failure and prices are high, and now we grumble because we have nothing to sell.

You say this is an overdrawn picture, and does not represent the true state of affairs. I say in far too many cases it is literally true, and the truth of the statement is borne out by the facts. I would advise as a remedy the adoption of better methods. Move on or quit. The haphazard, slip-shod methods of a century ago will not do now. If a farmer does not keep step with the advancing progress of the age, he may as well throw up the sponge, it is useless to sell out and seek some richer soil or more favorable climate, because the same methods will produce the same results the world over, and there is much truth in the old saw, "The rolling stone gathers no moss." Work, constant and intelligent is required in every climate and land, and he who lies supinely on his back waiting for a fortune to roll into his hands, will enter eternity a pauper. Cultivate habits of greater economy, stop the leak and waste. Competition is more pressing and intelligent than in days past. Remember fine clothes, fine carriages and expensive musical instruments do not help to raise the mortgage off the farm. Breed and keep only the best kinds of stock, for such are always kept at a profit, while poor and low grade

stock is kept at an actual loss. Provide warm, clean quarters for your stock, with all the best food available. Much valuable food is wasted each year by allowing the corn to ripen and bleach in the field. Prof. Henry estimates that 40 per cent. of the value of the corn crop is found in the husks and stalks. We can only succeed by making everything count, and carefully counting everything on the farm and elsewhere. A man seldom rises higher than his aim. If a farmer gets ahead and wins it is because he is a business man, and conducts his farm on business principles. One great trouble with many farmers is that they think they know too much; they are wiser in their own conceit than seven men who can render a reason. They will not read Prof. Henry's farm bulletins, because they say he is a kid-glove farmer, and therefore his methods are not practical. They will not attend our farmer's institutes because, they say, they are run in the interests of a certain political party, and not in the interest of agriculture. Such men are afflicted with a complication of incurable diseases—ignorance, superstition and bigotry.

If you wish to make farmers of your children, beautify your home and its surroundings. Place here and there an evergreen or flower-bed, and above all, have a well-kept lawn. There is nothing on earth which will attract the eye or captivate the senses like a well-kept lawn, interspersed with flowers. If your boy manifests a little more than an ordinary degree of intelligence, don't educate him and put him in some of the professions, but educate him for the farm. One of the prime needs of agriculture to-day is more brains and less muscle. The farmer cannot know too much. We hear a good deal said about educated fools, but there is no way of telling how much greater fools these men would have been without education. It is not the men with knowledge, but the men who assume to know so much, that disgust the world, and the farmer who knows it all is just as big a nuisance as the other fellow who knows it all; but the farmer who reads the agricultural papers, keeps his eyes and ears open, and learns something from everything and everybody with whom he comes in contact, is a farmer

who will grow and broaden into a wise and wealthy man, make a better neighbor and better citizen. I claim you can only judge of a man's ability to farm by visiting his premises and knowing his methods. If you find growing this year two blades of grass where but one grew last year, you may safely conclude the farmer who has brought about this condition of affairs is a success. But there is a vast difference between the words and works of men, and it takes some time to become thoroughly acquainted with these tongue-tied gentlemen — I mean gentlemen whose tongues are tied in the middle, and both ends flat. I once had a neighbor who could make the best agricultural speeches to which you ever listened, but that is all on God's earth he could make; he could not make a living on the best farm in the state of Wisconsin. I saw him try it for forty years, and he finally became a bankrupt. Let your children see the bright side of farm life, remembering that all work and no play makes Jack a dull boy.

Boys early in life manifest a liking for some kind of sport, hunting, fishing, base ball, or some kindred amusement, guns, dogs, boats and balls should be provided, and time given for their enjoyment. Teach your boy that it is just as honorable to haul manure, plow corn and dig potatoes, as it is to stand behind the counter measuring off calico and ribbons, and with a sickly smile cater to the whims and caprices of the senseless butterflies who come to buy; teach him that it is just as honorable to raise a perfect specimen of the bovine, or equine, as to stand at the bar of justice and plead the cause of some worthless vagabond or soulless corporation. Teach your daughter it is just as honorable and much more useful to know how to milk a cow, feed the pigs and prepare a good wholesome meal, as it is to know how to play the piano or dance the last fashionable glide. Do not think me indifferent to the accomplishments of life, do not understand me to say it is a woman's place to milk the cows, feed the pigs, or even attend to the kitchen drudgery. But I do say the mother who raises her daughter up in ignorance of these matters, makes a grand mistake, because circumstances in life may

render such a knowledge necessary, and success in the future may depend very largely upon this knowledge. If there is a probability that your daughter will become the wife of a farmer then a thorough knowledge of farm life is absolutely necessary, and if she should chance to become the wife of a business man, this knowledge will make her no less amiable or attractive. Teach your daughter to be a lady of brains as well as muscle; teach her her rights as an American citizen; teach her to demand the right of the ballot and to use it for the protection of her home and her family against the arrogant and supercilious demands of the ever increasing rum traffic. Teach her the man who would deny to her this right is unworthy the sacred name of husband.

In 1827, my father came here to the lead mines of southern Wisconsin. He dug down at Shullsburg and he dug up at Mineral Point and over at Dodgeville with varied success for two years, after which he went back east to Ohio and remained there until 1835, when in company with his family and a few friends, he moved here and settled upon the farm which I now own and cultivate. He selected for his home the most unsighty spot that could be found on the whole section of land, and surrounded it with out buildings and fences corresponding with the site. Now, those of you who have noticed the early pioneer, have noticed this fact — they are not very particular in the location of a site or in the beautifying of a home. I do not say this as a reproach upon those good people, because I believe there is no class of men or women living to whom society are under so many obligations as to the early pioneer. They have made the future of America possible, and I say to you here tonight, when you shall view the cloudless heavens, those stars shining with greatest luster but feebly represent the disembodied spirit of the early pioneer made perfect; each of whom deserves to have erected to his memory a monument higher than the Eiffel tower of France. The children grew up tc manhood and womanhood round the old home, and struck out in the world for themselves. I finally reached my majority, and as I failed to see anything very

inviting about the old home and its uncouth surroundings, I told father I believed I would go to school. I thought I would like to become a Methodist preacher. He was always ready to humor any whim I might entertain. He bundled me up and started me off to Madison, to the state university. I came here and entered the regular classical course, and after four years of an incessant struggle with the Greek and Latin conjugations, and declensions and higher mathematics, I finally concluded, as there was no royal road to wealth, neither was there a royal road to an education, that I would return to the old home, so accordingly I went back and got married, as every sensible man and woman ought to do. Spring came, and I prepared for operations. I plowed my garden and got the ground ready for the reception of seeds. There came one of the beautiful days in early spring which sometimes come in this latitude, and Mrs. Van Matre had some bunch onions and some onion sets and some lettuce seeds she wanted put in the ground, so I took a stick and went out to mark off my garden, and when I got through you never saw such a sight. The rows were as crooked almost as a ram's horn — speaking guardedly, they were as crooked as a dog's hind leg; as the ladies say they looked "awful horrid." Father was out leaning over the fence watching my operations and chewing tobacco; he was an inveterate tobacco chewer, and to night I am suffering from his early indiscretion, and I would say to any man here engaged in raising a family of children — don't chew tobacco or drink whiskey, because the sins of the parent are visited upon the offspring even unto the third and fourth generation.

At the time alluded to there was a young man living in our neighborhood by the name of George Martin. We called him Shanghi Martin; this name was not given to him so much on account of the inordinate length of his legs as on account of the peculiar manner in which he used them, he was knock-kneed, or in other words he interfered in the hocks. On the morning in question he came ambling down the lane. When he got along to where I was at work father says, "Shang, come over here." He was a good

natured sort of a fellow so he came along over and leaned across the fence beside of father. Says father, "See there: there is a specimen of educated farming." He never lost an opportunity to give an educated farmer a dig. He didn't think I heard him, he didn't intend I should hear him, because he would not have said anything to hurt my feelings, but I did hear him, notwithstanding, and it touched my pride. Said I to myself, "Is it possible that I have spent five or six years of the best part of my life, and a good many hundred dollars in acquiring an education, and have come home to bring reproach upon my chosen profession?" Right then and there my being underwent a change; as the Methodists say, I was converted. I was born again. From that time on, my garden rows and my corn rows have been straight, my moral path has been comparatively straight, and my financial accounts have been absolutely straight. Each day has developed to me new beauties in agriculture, and I say to you here to-night, I would not change my chosen profession, with its pleasant home surroundings, for any other business on earth. And I wish to say to the farmers assembled here to-night, in the language of the immortal Longfellow:

"In the world's broad field of battle,
In the bivouac of life,
Be not like dumb, driven cattle
Be a hero in the strife."

Organize and attend your farmers' organizations, agitate and educate, and teach the political demagogue of this land that you are a factor in American politics, and your rights have got to be respected. (Applause.) And if any political party in the state of Wisconsin shall presume to withhold the appropriation which makes your agricultural education possible, see to it at the next election, that such party shall be buried so deep that it never will again see the sunlight. (Applause.)

HOW TO GET RICH OFF THE FARM.

Mrs. J. A. Clark, Waterloo.

There is a general complaint—and I presume there always has been—since Adam began to raise vegetables, that farmers cannot get rich off of their farms. A farmer's wife myself, and a descendant of a direct line of farmers, running back to the original Puritan stock of New England, cognizant of all the "ins and outs" of a farmer's life both east and west; I propose to consider this matter in my paper here to-night, and the point I shall try to impress on you is that the complaint is entirely groundless. In order to show this it will be necessary to take a broader view of riches than the extremely narrow one that money, or property which can be converted into money, is the only wealth that a man can possess. Some one once said that "God shows the value He sets on money by the kind of men He gives it to."

We have all heard the expression, "land poor," and it means to us a man who has more land than he can use profitably. It may be valuable and profitable under good management and in the right man's hands, but we all know of cases where too much land is a damage to the owner. So in regard to wealth. A man may be money poor—if he has so much that he can not use it correctly—if instead of spending his income in good ways he piles it up as an ever increasing burden on himself—if he is mean and stingy, avaricious and grasping—if he uses his wealth to harass his neighbors and crush his competitors. That man, however great his possessions, is *money poor*, and the more wealth he has the poorer he will be. There are two ladies in this country which I can hold up as examples of this point.

One of these lives in New York. She is reported to be worth from twenty to forty millions, and while her husband is also rich she keeps her property entirely distinct from his, and manages it herself. She is said to wear poor clothes and to be extremely miserly in all her personal ex-

penditures. She is avaricious, grasping and eager in seeking to enlarge her store. She is known for no charity, and is fond of lawsuits and litigation. Most of you will recognize this person without my naming her. Some people — but I think they are wrong — call her the richest woman in America.

There in another lady I will contrast with her — a wonderful woman whose philanthropic works during the past twenty-five years have extended over two continents, and into almost every field of human misery. Our heroes of the rebellion knew her as the first woman nurse to bring comfort and succor to the wounded. Since our war in America, the sufferers from the Ohio floods, the Michigan fires, the Charleston earthquake, the Texas and Dakota drouths, and many other calamities, have found this lady a ministering angel of relief. In the war between France and Germany — honored, respected and beloved by all — this noble woman attended to the wants of soldiers of either army. In the horrors of the Paris commune there appears the same vision of mercy, and the frenzied mob made way for her to pass, and had one dared to raise a hand against her he would have been shot before it could have fallen. I can tell her name; it is Clara Barton, president of the National society of the Red Cross of America. When the third international convention of that organization was held at Geneva; one of the grandest assemblages of men that could be gathered, men representing the highest rank among the civilized nations of the earth, men of thought, of heart, of wisdom and power, called together from all over the world to deliberate on great questions of national import, military power, the neutrality of nations, humanity in war and wisdom in peace, in the midst of these men sat this one woman, the one in all that assemblage the most honored and esteemed, and it was to her and to her alone, that it was voted "that she had merited well of humanity." This is the highest expression of approbation, honor and esteem that the French language can convey.

She has given her life to doing good, and what has she received for it? The Grand Duchess of Baden has given her

a court jewel; Queen Nathalia, a Servian decoration; the Queen of Italy, a Red Cross medal, the Emperor and Empress of Germany, the Iron Cross of Merit; that is all save the love, gratitude and veneration of the soldiers and sufferers of two continents. But can any one doubt between the unknown millions possessed by the first mentioned of these two ladies — useless stuff stored away in dark vaults, and the fund of love which Miss Barton has deposited in so many thousand human hearts, as to which of these women is the richer.

You will see by this the idea I wish to convey as to the kind of riches I think our farmers should possess — and if we can realize that money in itself is the very lowest grade of wealth, then it is easy to see means of acquiring the higher and better kind.

Everybody would like to be a millionaire. I have been told that a man who gets a good wife gets property worth at least a million dollars — though I am doubtful if my husband considers himself quite a millionaire, but this is a kind of goods that varies, though as a rule it is very valuable — so valuable in fact, that it ought to be taken excellent care of, and the man who permits a wife, whom he may value as low as $100,000, to go from a hot kitchen to a cold out doors pump to get a pail of water, to pull her wood from a snow-covered pile, to wade through the slush to the barn to milk a kicking cow — this man is taking great risk with very valuable property, and the first thing he knows he will be poor.

There was once a man who required his wife to get up and build the fires, while he contentedly enjoyed his beauty sleep in the morning, and he went to that extreme that once on her waking him he complained and wished he were dead that he might have a further and longer rest. "Yes," responded his patient spouse, "and even then when you do wake up you will find the fire all ready for you." Even the worm will sometimes turn, and I have always thought the woman predicted that man's fate correctly enough. In what other ways may a farmer be rich? In nearly every way.

There is in farming and being a farmer, as Dr. Johnson said of Thrales Broney, "A potentiality of riches beyond the dreams of avarice."

A man living in Wisconsin, lives in one of the most beautiful locations in the world. As I stand on a high elevation near our farm in summer, my eye takes in a circle of a dozen miles of unsurpassed beauty, I see our hills and ridges crowned with their glorious canopy of trees, the fields gleaming with waving grain, the valleys are green with grass and animated with grazing heads, and the flowing water completes the charm of the scene; while on all blows the fresh June breeze that furnishes the life giving impulses to our lungs and heart, and aids in producing three time a day that delicious sensation known as the Wisconsin hunger.

I say delicious sensation for, though to many, I am not sure, but to a majority of the human race, hunger is a torment and a sorrow, to a Wisconsin farmer it is a source of joy and pleasure, a source in fact to the means he has of appeasing it. No where else has nature been more lavish in her bounties to hungry man. We may not have tropical fruits but we have ice instead, a crop I have never known to fail, and we do have a sufficient and continuous variety of other fruits from the strawberry down through the raspberry, blackberry, grape and apple, to give us a succession that lasts through the year. Our streams furnish us good fish and our fields and woods some game. A good farmer has beef, pork and mutton for his meat, and poultry of all kinds is the commonest item on his table, while a garden raising a large variety of vegetables should be a part of his business. In my experience, no other class of men are so rich in good living as the farmer, and this is a kind of riches that strikes us more intimately than any other.

The farmer should be rich in health, the greatest of riches; without which any man is poor, however great his possessions. The strong, physical labor which his business requires of him keeps him in good condition, and he breathes the free air of heaven uncontaminated by a multitude. Farmers, at times, complain that their work is hard;

no work is easy, but to all well-organized persons work should be and probably, to most, is a pleasure. There is no more pitiful object than a man loafing around continually, with no interest in accomplishing any object in life. And contrasted with all other occupations, it seems to me that a farmer's — embracing, as it does, a constant variety, a continuous change, not only of scene but of work — surpasses them all.

There is no steady monotony of doing one thing only, that falls to the lot of workers in most trades.

In the mint in Philadelphia, there is one man whose sole business in life is to watch the melting silver, and see when it reaches the proper boiling point. This is his occupation; he has no other work to do; and though undoubtedly master of his art, yet it seems to me that the extreme sameness of his labor must narrow and contract his thinking powers. But what a scope of intellectual activity the farmer's business demands. He is an all-round man, though it is to be hoped he is square besides. He must be a machinist, as a binder is about as complicated as a watch. He must be fit to do a job of carpentry, or a little blacksmithing. He must have some veterinary knowledge. He should be a gardener and a viniculturist (it would not hurt him if he knows something of chemistry). He must know all these in addition to the steady duties of raising and taking care of his crops.

There are a thousand things on a farm that call equally for an active mind and a skillful hand, and to fit a man for farming requires an intellectual development, such as handling any other business demands. If a farmer can do all this, and a large proportion of our farmers can, he is richer in mental gifts than the man who boils the silver, even if he owned the whole pot of it.

And there is another point about our farmer's work, with the exception of a few short periods in the year in which he is rushed, he can always take a day off, and in our long winters he has abundant leisure. This gives him more time to read than almost any other class of men. He ought

to be the best informed man going. His mind should be the richest.

Books and papers are very cheap now, and a small sum will buy a countless treasure of literature.

Our farmers are not as rich in recreation and amusements as they should be. I say this with regret. I presume the struggle consequent to settling up a new country and framing a new government, has given Americans a seriousness beyond other nations. The Germans can teach us much on this point. No one who is familiar with that people can doubt, that for their trouble and expense, they get a greater amount of pleasure from their recreation than the Americans do.

We have much to learn in this respect. Our farmers can always ride; this to me has always been one of my greatest pleasures. Whether it be in the buggy, the cutter, or horseback or in the common farm wagon, the owner of a good team has no trouble in achieving this charming diversion at the very lowest expense—the champ, champ, of dollar bills in the horses mouth which Holmes mentions as one of the drawbacks to the enjoyment of a ride with a livery beast is not for him, and if our roads were what they should be, nothing would be wanting. I acknowledge that here our farmers are poor—the theory and practice of road making in this state would be laughable, were not the results so deplorable. That a whole people should be siezed for a few days in spring, with utter fresh mindedness and dementia—that men who the rest of the year are accustomed to full days and half days work should come out at half past eight and work as slowly as they can, resting at least over half the time until half past four and call that a day's work, and then go home and sneer at their wives for the uselessness of their labor, if they find them cleaning house or raking the door yard. Why these same men if they do find a hard and firm piece of highway in the district, must immediately plow it up, and if they discover a muddy place must directly haul in about a foot more of mud—the reason why of these things, in the language of Dundreary, is what "no fellow can find out."

"Errant Knight," Property of Leslie & Burwell, Cottage Grove, Wis.

But enough of our poverty—let us get back to our riches.

A rich man is known by his servants. How many serve the farmer?

> "His state is kingly,
> Thousands at his bidding haste."

His horses work kindly and obediently for him through the long summer day, for him his sheep give wool, his cows milk, and his cattle and hogs grow fat. His hens lay eggs and hatch spring chickens, and his turkeys, though doing no work, yet fulfil their part in the functions of thanksgiving and Christmas, and his dogs both obey and love him.

I seldom take up an agricultural paper without finding in it a fling at the dog, but I know of few farmers' homes where that faithful friend and companion is not found, and though at times there are bad dogs as well as bad men, I would not abolish either race on account of the faults of a few. I would prefer to be one of those who think that "in that world beyond the sky, my faithful dog shall bear me company" rather than the narrow minded man who would reject the affections of so devoted a follower.

If others have their diamonds and precious stones, have not we also our jewels? You remember the noble Roman lady, Cornelia, who when her friends were boasting of their ornaments and asked her what she had, brought forth her children, saying, "These are my jewels." This remark and that jewelry have given immortality to Cornelia's name, while her friends with their less valuable gems have sunk into a nameless oblivion.

When I look at our farmers' manly sons, bronzed by toil and vigorous with health, when I see their daughters, rosy with the glow of their youthful beauty, happy in the enjoyment of innocent thoughts, and good digestion, the blood, rich with June air and abundant nourishment, mantling their cheeks, the bright eyes and pearly teeth, when I see all this I say: Behold our jewels, match them if you can! And it is to these our farmers' children that our country looks for its maintenance and growth. We complain at times that our smartest children leave the farm. We have no

right to make this complaint, for were it not for the constant inflow of fresh blood from the farms, the dwellers in towns would run out. It is from the bleak and rocky hills of New England, from the farms of western New York, from the fertile fields of Ohio and the plantations of old Virginia that our statesmen and distinguished lawyers and our successful business men have sprung. Our farms are the seed-bed of our national life, and our children are the revivifying influence in our country's growth, and it becomes our duty to fit them in the best manner possible for the exaltive mission that lies before them. We can do this, for among our other riches, we are rich in good schools, and if our children object to being taught in English, the easy and mellifluous German language is open to them, and it has been decreed to be just as good. I think this point has been settled.

There are those who are opposed to giving a high grade of education to their children because it tends to take them away from the farm, but as I have already remarked some must go to keep up the rest of the nation and it becomes us, as enlightened and patriotic citizens, to so fit them that whether they go out or stay in they will be a credit and an honor to the class they go from or to the one they remain with.

If a farmer had a gold mine on his place and still not work it he would be called a fool. We have in this state in our university an intellectual mine that will pan out easier and in larger quantities a better grade of products than any gold mine. This mine is on our own land, it lies at our own door, we have paid for its development, and we are assessed now for carrying on the work. What then shall we call that man who refuses to take — if he can — his share in this productive and profitable investment? For his boys, if he wishes them and they wish to stay on the farm, there are three courses of pure agriculture, and for his girls an infinite variety of studies that will fit them for any position in life, even for what appears to me the very highest — a farmer's wife. There are those who say that farmers' children are looked down on and snubbed at this

school, those who say this are ignorant of what they are talking about. We raised two children on our farm. We sent the boy to the agricultural course, while the girl went through the regular four years studies. They would know if they were ill-used, but they never complained and the crowds of boy and girl students, that in bands of a dozen or more, regularly about twice a year for the last five years drop in on us at our home, always seem to have no objection to a farm or to a visit to a farm, as they find it at our place. In fact no other class is so well fixed to entertain people as the farmers; provided, of course, he has the right people to entertain. We have found this out in our experience with these students and other good folks who have come to see us. Our house is small, but one of our friends once called it an India rubber house, because we could expand it sufficiently to take in all who came. There are many worse places to sleep on than a mow of fresh, sweet smelling hay in the barn. The top of a newly-threshed straw stack, with a covering of sky, spangled with shining stars gives a luxurious couch, with a drapery above you that no pent-up room with walls and ceiling, however decorated, can equal. If you are crowded for seats a pumpkin will make a very efficient stool and when you consider the glorious feature of this fruit, how in fulfillment of its destiny it will be developed into that excellent product, alike agreeable to the purse, the appetite and the digestion, the pumpkin pie, you may have the pleasure of thinking you have a situation as satisfactory as a throne.

I know these things are so, for I have tried them, and in paying visits it has been my experience that for good times, for good food, and for pleasant intercourse, no city house in which I visit surpasses the farm house. The secret of all this enjoyment consists in being farmers, and not trying to ape city fashion. A farm wagon on a hay rack filled with a congenial crowd will give fully as acceptable a ride as an isolated string of top carriages. I mention these things not because I think you do not know them — I have no doubt but what you all do — but hospital-

ity is a farmer's virtue, and I cite this as one of his distinguishing riches.

Did it ever occur to you how large a piece of land you own, even if 40 acres is the extent of your farm? A tract of land of that size runs 4,000 miles in one direction. You own to the center of the earth — the portion that you plow and sow and crop is but an infinitesimal part of your possessions, but you don't want to occupy your property in that direction. A rather mean man was once very ill, and somebody asking his neighbor how he was, was told that he was sinking. Well, said the inquirer, that was the way I thought he would go. So I say, we don't want to work down that way, for overhead our domain runs infinitely further.

In that line we are bounded only by the stars, and as our possessions expand in that direction and run down to a point the other way, our proper course is to fit ourselves to occupy the larger tract. We have full assurance that we may do this. Good deeds should be the farmer's greatest riches.

There is a stability to this kind of wealth that is known to no other broker; banks, and the rise and fall of stocks affect it not in the least. There is no decoy to the treasures laid up in Heaven. They are in a kind of cold storage, where they will keep forever.

Other wealth is as water. It abounds for a little to such as think they have it, and then suddenly passes on and goes to others. We are told that these are the things in which abide faith, hope and charity. And the greatest of these is charity. It was my privilege once before in this place to give an account of the Daily News Fresh Air Fund, by means of which the poor children from Chicago are every summer sent out into the country, to see the green fields, the woods and growing crops, and to breathe the fresh June air, which is denied them in their contracted streets and crowded houses, and for two weeks to fill the narrow bounds of their life with that abundance of pleasure, of liberty, of sport and of good healthful, nourishing food, which the short sojourn in the country gives them. Like

the Old Roman, who would always close any speech with the words that "Carthage must be destroyed," so I think I can always close any remarks I may make with praise of this most noble charity. The part the farmer has to perform in this arrangement is to express his willingness to take a couple of these waifs as guests, and they are sent to him free of expense. His only charge then is the amount they will eat, and that is not noticeable.

I have never known a lack of good food on any farmer's table. The children as a rule prefer fresh milk to anything else, and when the recording angel balances up the account of a farmer who has entertained a pair of these children, he will find himself credited with an amount that will astonish him in comparison with the forty or fifty cents a hundred he would get for that product during the hot weather at the cheese factory.

I have heard people object that they would not risk the danger of taking children that they knew nothing of, into their family. There is this danger in any children, even your own, you cannot tell how they will turn out. These children are usually selected by their Sunday school teachers, and my experience has been that they will compare favorably with any band of the same number collected from the villages, or even from the farms.

We have had no bad ones at our place, and have ever found them cheerful, happy, contented, grateful and loath to leave. They have always gone back improved in health, and they have left with me the satisfactory assurance that at very little personal inconvenience I have been the means of giving a happy fortnight to their lives, and perhaps a permanent advantage to their health. Send next summer a card to the *Daily News* asking for a couple, and try this for yourselves. Here surely is a chance for true riches, and if you can acquire them this way, I can point to my Wisconsin farmer, not perhaps over endowed with perishable dross but opulent in charities and good deeds, wealthy in the beauty of his country, the happiness of his home, the comfort of his surroundings, his schools and colleges, his boys and girls, his well fed stock, his fertile fields, his healthy

body, and his mind filled with thought and nourished with good reading, I can point to him, I say, as the richest man on earth.

The President — The next address will be upon the subject of "The Future of the Farmer's Alliance." by A. J. Phillips, of West Salem, state lecturer Wisconsin Farmers' Alliance.

Mr. Phillips — I think Mr. True made a mistake in fixing the time for the papers. My friend who just spoke I think should have been last; it needs some one to talk after half-past nine that can hold an audience better than I can. But perhaps it is right that the subject of the Farmers' Alliance should come last; the "Diseases of Animals" came first; that has been here a long time. "How to Get Rich Off the Farm," came next, and that has been tried for a long time in this country. "Forty Years Behind the Plow," and start as young as my friend did, is a good while ago, and as the Farmers' Alliance is a plant of recent growth, no doubt that it is fitting that it should come last. If any of you are interested enough in the subject to listen to it, I will read you what I have prepared in a very few minutes.

FUTURE OF FARMERS' ALLIANCE.

By A. J. PHILIPS, Lecturer of State Alliance.

Mr. President, I accepted the invitation to read a paper on this comparatively new subject with some misgivings, and will detain you only a short time on the present and future of the Farmers' Alliance. Its growth has been rapid and marvelous. Its objects, the bettering of the producing classes. It is to-day the largest industrial organization of its age the world has ever seen, from a small beginning in our state three years ago it now numbers nearly two hundred alliances and about eight thousand members, and it is safe to predict that at the present rate of increase when

the state alliance meets in LaCrosse, next June, the delegates there assembled will represent a membership of ten to twelve thousand. From the gulf on the south to the queen's dominions on the north — from the Atlantic to the Pacific — this movement of the farmers, strengthened at every point by a union of other laboring classes, is gaining in strength every day. The industrial classes that produce the wealth of the county are thoroughly aroused, and the industrial man, as my friend, Broughton, calls him, is most terribly in earnest — determined to better his condition socially, financially and politically. Never since the Civil war have the citizens of north, south, east and west, joined hands with such a cordial grasp in a common cause as they are now doing in this alliance movement, and it is my opinion that it will do more to wipe out the sectional feeling which has heretofore existed and consign the same to oblivion than anything yet done. Coming on at this late hour I regret there is no time for discussion — as its importance demands. But I will endeavor to present in a plain manner as I have learned it by experience and observation. The press is changing somewhat, being now quite anxious for alliance news. Why have we the alliance, is the question.

For years our public men have told us in tones not to be misunderstood that farmers were not making the money they should; that agriculture, though it was the basis of the nation's prosperity, was depressed. It has been echoed and re-echoed in these halls — that though the farmer worked harder and more hours than any other occupation, as a rule, he was continually growing poorer — and the most humiliating fact about it all was, he was told that it was all his own fault, he was sticking to the old ruts, persisted in hunting chickens with a bull dog and looking for butter in a beef cow, and as there was some truth in this he began to believe it. At this juncture, prompted by hints received from the late lamented Hiram Smith and other prominent dairy men, the Hon. C. E. Estabrook came to the farmers' rescue, and presented a bill to the legislature, which was passed, appropriating $5,000, to establish the farmers' insti-

tutes or schools. Some said it was to make places for more men at the public crib, but it was thought the end would justify the means. The second year, in order to reach more farmers, and some said to make it better for those in charge, it was raised to $12,000, and worked so satisfactorily that its proceedings and results drew forth not only the admiration of our own country, but of the civilized world. Farmers of wealth and influence were employed — and the unsuccessful were discarded — and after attending a number of these meetings or schools, I found this to be a fact, that no one thing was urged so much, as that the average farmer should work less with his hands and more with his brain, should work less hours and read more. Especial pains was taken at every institute to distribute reading matter. The publishers of papers obtained the farmer's name, and soon his tables were covered with reading matter of every name and nature, and as he read all sides of the questions of the day, and learned how to make better butter and produce beef and pork at a less cost. He also read that there were other reasons why his business is depressed and why he is not prosperous and reaping his full share of the profits of his labor. He reads that capital trusts and monopolies are continually tightening their grasp on his throat; he reads that as was prophesied by the immortal Lincoln, that the wealth of the country is passing into a few hands; he reads and has heard it stated that co operation is the only way out; he reads and has heard it stated that laws should be made protecting his interests; he has been told by the president of the State Agricultural society that nine-tenths of our state legislation for the past twenty years has been against him. Prof. Bremer tells him if he bases his hopes on legislation as it now exists, he hangs on a slender thread. Superintendent Morrison tells him he must read and study more or he will fall behind in the race. He reads that the secret of success in life is to be ready for his opportunity when it comes; and he has concluded it has come in the Farmers' Alliance. Hon. Andrew D. White tells him that he bears an undue proportion in the burdens of taxation. He reads that Secretary

Rusk, who is working so hard to place the department of agriculture on a firm footing, says that the circumstances of five million farmers must be made a study by those in authority, and that the burden of taxation is not equally divided, and that he bears more than his fair share; also the circulating medium should be increased, and he feels that a solution of this question must be met.

He knows the rates of interest are too high. He knows that capital from the old world is being brought here to buy his home when it is sold by the sheriff, and that his children are liable to be tenant farmers. He feels that he must unite with other laboring classes in a common cause against a common danger if the country is to be saved. He knows that extravagance is rampant in the land, and that he is paying the bills. He reads all I have stated and ten thousand times more, and what is the result? The alliance is organized as the only means of relief. He has been told if the farmers were united they could elect men to the legislature who would not turn a deaf ear to his wants, and he has made up his mind to do it. The alliance is here to stay. It is increasing in every state in the Union, and its influence will be felt in every farmer and laborer's home in the land. The Grange has done grand work. The Institute has and is doing good, but neither of these two have reached the great masses.

A farmer who has been a prominent granger and institute worker said to me, "The Grange and Institute are seven stories high and one story wide; now to reach the rank and file we want something that is seven stories wide and one story high, and the alliance fills the bill." I have been told that you could not hold the farmers together in an alliance long enough to do any good; but they did in Kansas. They have elected five congressmen and a United States senator, alliance men. Minnesota has elected a congressman in the fifth district and an out-spoken temperance man, too. He is a Scandinavian, and was elected without solicitation on his part. I find in looking for points concerning the future of this combination of not only the brawn but the brain of our country, that it is not confined to the west and south,

but that the east is aroused. Why the quiet old Key-stone state is organizing at a rapid rate—four thousand in four counties joining in a single day. Do they demand anything unjust? *Oh, no.* They ask that all property be made to pay its fair share of taxation in order to relieve the owners of real estate from unjust burdens. Hon. Matt. Anderson has always urged that this be done. The alliance asks that other organizations co-operate with them.

In bringing about these much needed reforms surely there is nothing wrong or unreasonable in these demands, and I cannot but think that an organization based on principles of justice like the foregoing, must be permanent and have a bright and prosperous future before it. I heard it stated a few days ago that the Southern Alliances were very unfair in their demands, so I began to investigate. I find that the leaders are anxious to do away with the old sectional feelings, and that we have a common country with a common purpose, viz.: prosperity and education of the masses. They ask for a reduction of taxes to the lowest point consistent with an economical administration of the government. And right here I would suggest that if our legislature, now in session, could be so influenced by alliance principles as to be guided in their deliberations this winter by the foregoing suggestions, it would be a blessing indeed, and would be the initial step in inaugurating a system that is assure to be inaugurated by the future alliance as that the sun shines. Those southern men, in winding up say: "We are here to do our duty as God may give us wisdom to see it." I have faith in the future prosperity of an institution based on right and on better citizenship, and feel like giving those men the right hand of fellowship, and bidding them God speed. As a citizen, those memorable words of Patrick Henry have made a deep impression on me, to-wit: "We have no way of judging of the future but by the past, and I oftimes think in my sober moments what has the United States senate, made up largely of and controlled by millionaires, the congress of our land guided by money kings, the legislatures of the several states elected by and manipulated by corpor-

ations and capital, done during the past twenty years, to lighten the burdens that many of our best posted men now have the honesty to say are resting on the shoulders of the wealth producing classes. Who can say a single thing let him arise and answer." In this great uprising we can only hope for the best and ask ourselves the question, what does the alliance of farmers, citizens and laborers need to make its future bright and prosperous? I can only answer for myself. I say good honest leaders, men who will be guided in their duties and actions by a love of their country and the best good of its citizens, the upbuilding of homes and the general good and prosperity of all the people, rather than by their allegiance to any party. And I claim that it is the duty of every honest citizen in every locality to do his share in supplying this demand and not stand idly by and let mistakes be made. It needs the energy, mental power and heroism of our educated farmers, consecrated to the great work of helping their co-laborers in this broad land to perpetuate the blessings which this great republic should enjoy.

There was a time when after election was over and successful candidates assumed control, that the farmers settled down in indifference and awaited results, with but little interest until another campaign rolled around. Now the situation is changed. The future of the Alliance is at stake, also the wellfare of the producer and laborer, and they are watching what is being done. They are organizing both farmers' and citizens' alliances — and if the present administration is not run partially in their favor the future alliance will see that it is changed. I noticed in a correspondence from our state capitol at the opening of our present legislature that one of the appointed officers said: Do the democrats mean to say that that office will be abolished or part of the employees will be discharged to curtail expenses. *They can't do it.* It is only a meaningless splurge to please the citizen and voter at home. I will say, my dear sir, if you are present (which I think not likely, for such men rarely attend farmers' meetings), that the citizen and voter at home have just as many rights that the legisla-

ture is duly bound to respect as the favored ones who secure soft jobs at the capitol at big pay; and I say further that the time was when the citizen and voter at home were satisfied with this taffy. But the alliance in the future will change this — and one thing is sure that a single acre of performances will satisfy the farmer better than a whole world of promise. The alliance has a purpose, and is bound to accomplish it. Two years ago the farmers took hold of the matter and nominated and elected a man for governor whom they knew was their friend, and who had done much to teach them better methods, and who was thoroughly acquainted with their condition, but very few changes were made and many were dissatisfied. Expenses were not decreased, and two years have rolled by, farmers paying interest and taxes, and the farmer realizes that he is living in the age spoken of in scripture which says, "to him that hath shall be given and from him that hath not, shall be taken that that he seemeth to have," and he feels that he must work out his own salvation. So he forms alliances and decides to vote for his interest and not with his old party, and the result is a land-slide and a surprise.

Now the mission of the future alliance is to look closely after this matter. A new governor has been elected, and in his first message recommended economy as the watchword, says that the pledge made during the campaign to lessen expenses and taxes, must be borne in mind. He discovers that too many men have been placed on the pay roll of the state; that boards have been created for the furtherance of special privileges. He says that the burdens of the people should be lightened instead of increased, and says but little can be done without the earnest aid of the legislature. The question now that engages the attention of the alliance is, will the legislature heed his advice? What is done needs to be well done. The alliance demands that United States senators be elected by the people. If that were in force it would save much trouble and expense the present winter. It desires to stop a great and growing evil — the obtaining of vast tracts of land needed for homes for our people, by alien owners. It demands that cities or towns that grant

license to sell liquor shall be liable for all expenses and damages growing out of said sale. A man said to me the other day, be careful what you say on this subject. I said, if the alliance dare not take a positive stand on this subject when right, justice and the welfare of the people comes in question, I have no faith in its future prosperity. I have more hopes in it since the ladies have taken hold of it so earnestly. They did that in Kansas last fall and made a great difference in the vote. A bright, intelligent young lady is now alliance lecturer in Minnesota. The future alliance to be successful, must unite on a fair, concise and brief platform. Elect men to state and national offices who are in sympathy with the producers' interests; men in favor of a better education, better methods of farming, in favor of lower rates of interest and fairer methods of taxation; men opposed to alien ownersnip of land and in favor of economy in the management of public affairs, and men who dare stand up and vote to abolish unnecessary offices that the people are supporting, and that work for the state and nation shall be managed and paid for as work in other business and productive pursuits.

The conflict between the money power and the producer is now on, and to spend time and study how to settle and solve it is the duty of every patriotic citizen. If settled aright with justice to all for the watchword, it means peace, prosperity and happiness to our state and nation. To join an association engaged in this glorious work and aid in its solution is the noblest work a man can do. Thanking you for your kind attention, at this late hour, I will close by repeating some verses taken from the *Rural New Yorker*, representing Miss Columbia, with a class of seven, consisting of a politician, lawyer, banker, railroader, middle-man and speculator, with a farmer at the foot. She asks for a definition of justice and the farmer giving the best is sent up head with these words:

Go up head, let justice come,
Let all men that word define,
Equal rights and honest share,
On that motto form your line.

Be so just, so fair, so true,
That you strangle party hate.
Right, the only thing in life
That can well afford to wait.
Lift the fallen, free the slave, give him fullest recompense,
Build the ground-work of your cause
On the rock of common sense.
Learn that brotherhoods are strong only when the brothers pay
Bits of self denial in their lives day after day.
Learn that simple right prevails and that hope and truth are strong,
Learn that justice never came from matching wrong for wrong.
Bound together strong as steel, by the noblest purpose led,
Equal rights and honest share, forward, farmer, go up head.

THURSDAY MORNING FEBRUARY 5TH, 1891.

The President in the chair.

The President — I wish to request the Executive Board to meet in the Dairy & Food Commissioner's office at 10 o'clock.

President Chamberlin, of the State University, desires me to say to the members of this convention, that he will be glad to have any and all of you visit the University, at any time during your stay in the city, promising to afford you every opportunity possible to see the institution and its workings, and I hope you will all, or as many of you as can, embrace that opportunity and advantage afforded by this gracious invitation.

The exercises of this morning will begin with Good Clover Hay, by C. H. Everett, of Beloit.

Mr. Allen — Before this paper is commenced I wish to present a resolution.

(No objection is made.)

Mr. Allen — I ask the privilege of offering it, and also that it may be discussed; that the rules may be suspended for a short time for the discussion of the resolution.

(Reads.)

Mr. Allen — I believe, sir, that it is a recognized fact by everybody almost, that the present system of road making is almost a nuisance. I will guarantee to make the roads

in Dodge county for one-fourth of the expense, or what is assumed to be the expense of making roads there at the present time, and I will make better roads.

The President — What is the pleasure of the convention in respect to this resolution?

The Secretary — I appreciate fully the importance of this resolution, and I have the idea if we were to put it before the convention at this time, it would be almost unanimously passed. We are already half an hour late in entering upon the programme assigned for this morning. I think it will be better to allow the resolution to take its regular order.

The President — This resolution will go to the committee on resolutions.

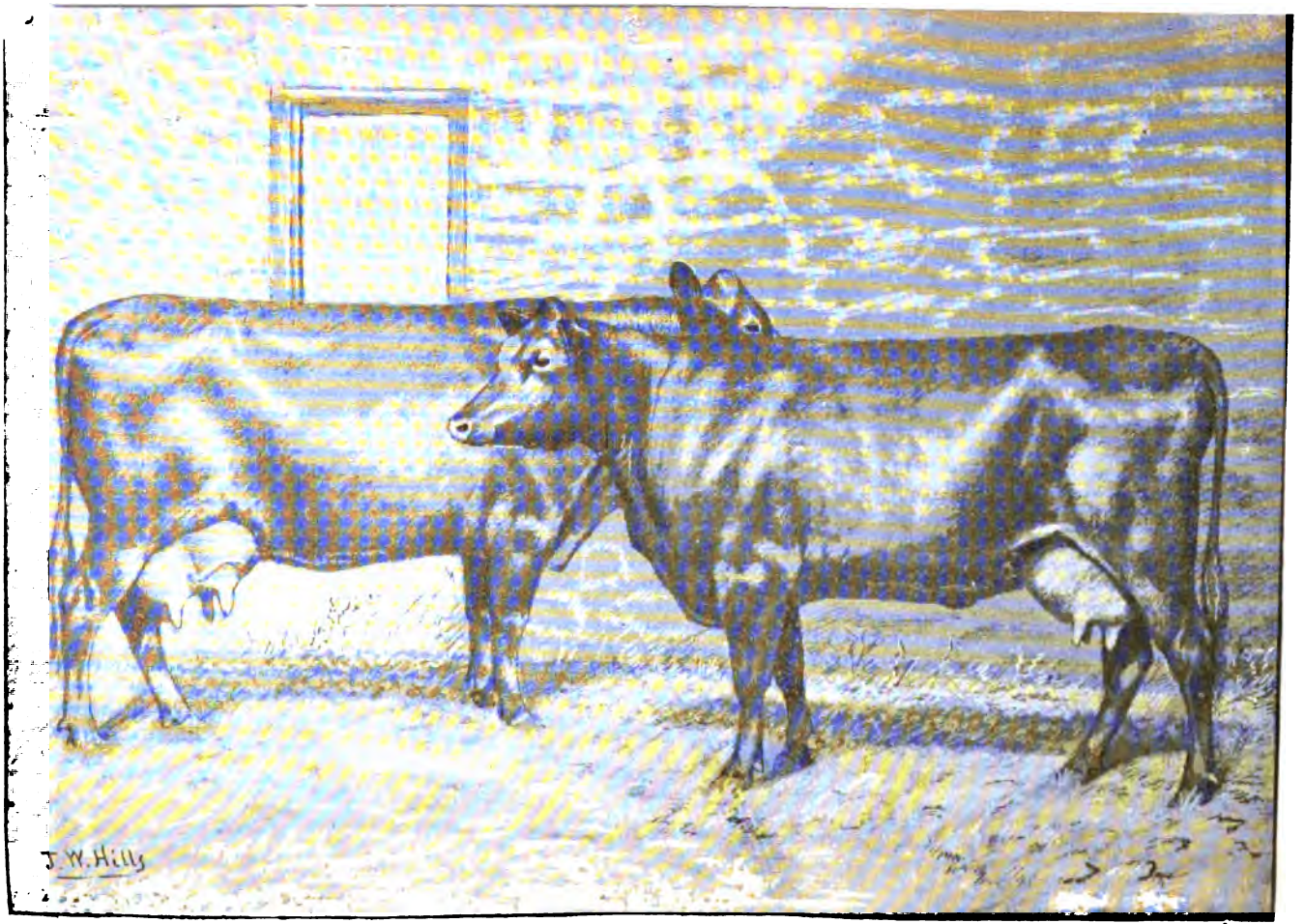
Mr. Wylie in the chair.

Mr. Everett then addressed the convention as follows:

Ladies and Gentlemen: This is a broad subject, broad and important. I feel that I am hardly able to discuss it as it deserves. Clover as a fertilizer is so well understood among our farmers that it is hardly necessary for me to dwell at all upon that part of my talk. But I would like to impress upon the minds of the farmers of this state the importance of sowing more clover than we do. Perhaps there is not a man in this audience who does not sow clover enough, and give it thorough cultivation; but there are farmers in the state who sow but very little, and attach but very little importance to clover as a fertilizer, and none at all to clover as hay. I believe we should sow clover with all our small grain, everywhere we can on the farm. I practice that method. I never sow a bushel of grain but I sow with it clover, and I think it pays, and that every dollar laid out in clover will bring back five in one way or another. Instead of the naked stubble fields which may be seen throughout our state in the fall after harvest, bare and barren, affording a place for noxious weeds, I would have them covered with clover, which protects the soil and

the roots of the growing crops to a certain extent, and is also to a certain extent a preventive against the ravages of the chinch bug. This young clover makes good fall feed for almost all kinds of stock, and is always adding fertility to the soil. Those of us who have permanent pastures, if we are able to turn our cattle on the stubble fields after harvest, we give our permanent pastures a rest, which is beneficial to them the following season by preventing them from being too closely cropped in the fall. I find land plaster beneficial, used in connection with clover. Land plaster is used to fix the ammonia in the soil, and that is all; it is not a fertilizer by itself, but as an absorbent of ammonia it is beneficial. You were told yesterday by Prof. Henry how the clover plant received its nitrogen through the little warts on the root, which has lately been discovered by a German chemist. I prefer the medium red clover to the mammoth.

As to the amount of clover seed we should sow, and the methods of sowing, it is perhaps best for me to say but very little; but I will say, do not sow eight or ten quarts of clover seed to the acre, you are throwing away seed, and that means cash. I have found by a little figuring that one quart of clover seed contains 550,000 grains. That amount scattered over an acre would give us twelve or more plants to a square foot. One-third may not germinate, we still have eight plants to a square foot, which is more than we can find on our clover fields after the first year. I do not give that estimate to you for you to adopt. I do not advise sowing one quart of clover, but give it as an illustration of possibilities under the most favorable circumstances. But I do think four or five quarts of clover seed is a liberal amount on most of our soils, and as good a stand as I ever had was obtained from two or three quarts; for hay I sow four or five. I sow it by hand, have always done so. Practice makes perfect, and I can sow very evenly. I would rather sow it that way than through a seeder mixed with grain, because I think they get it too deep to germinate that season. Of course it will grow when it comes to the surface again, but we want it to use that year. It is said



Red Polled Cattle, Property of J. W. Martin, Richland City, Wis.

very little clover seed will germinate and grow, sown two inches deep. One-half inch is considered the proper depth for clover. In very dry seasons I would recommend running a light harrow over the seed, and then rolling it. I did so with the clover that I sowed early in the spring on the last snow or mud as the snow is going off.

Perhaps I have said enough about clover as a fertilizer. I wish to call your attention to clover as a hay crop. I will not go into the chemical analysis of clover hay, there are others here that can do it much better; but I do say that clover hay has a higher feeding value than any other hay we can raise in Wisconsin. It is claimed that one ton of clover hay and one ton of oat or barley straw mixed, is equal in feeding value to two tons of good timothy hay. Clover hay comes nearer a balanced ration complete within itself, than any other crop. It is indispensible in stock raising, as it contains largely the elements that go to make up the growth of young animals. The sheep man well knows the value of good clover hay, and prefers it to any other kind for his flock. It is also good for the brood-sow, it aids digestion and promotes assimilation, and a balanced ration for the dairy cow must contain good clover hay. I prefer good clover hay to any other kind for horses and colts, but one should use judgment in feeding it, because there is something in it a horse likes better than anything else.

In speaking of good clover hay, I do not mean the average quality to be found through our state, that woody, musty, indigestible stuff found everywhere in abundance; such hay has lost a large percentage of its feeding value, and is unsatisfactory to both man and beast. Good hay must be bright and sweet, and must be possessed of the desirable aroma. The foliage of the clover plant is the most valuable part of the plant, and we must save it if we wish to get the full feeding value from our clover hay. I expect you will say it is impossible to have such hay, but I still say it is possible, as I know from experience. There is only one right method in my judgment to cure and handle clover hay, and I have found by that method a certainty of

success in producing a fine quality one year with another. I cannot say that of any other method with which I am acquainted. You all know that clover hay will go through the sweating process, will heat in the mow or stack if not allowed to cure out in the cock, and the cock is the place for it to go through that process. I cut clover hay, cock it up while quite green and cover it with hay caps, and let it sweat. The cap does not aid the hay in sweating, but it protects it from the heavy dews and rain storms.

There is a diversity of opinion as to when to cut clover. I have found by cutting off the stem of the clover plant as the head began to form, that the plant was full of water, very rank. When it is in full bloom, by cutting off the stem you will find the stalk is becoming pithy, is much sweeter to the taste, the sugar has gone up into the plant. If we wait until the head has turned well brown, the plant has got ripe; we make a mistake in cutting for hay. There is not as much sap in it, it can be handled more easily, but the hay has then lost much of its feeding value, it is poor stuff, and the ease of handling has been bought at a dear price. The time to cut clover is when it has arrived at its most nutritious state, and this is when it is in full bloom. We commence cutting clover in the morning after the dew is off, as external moisture of any kind must be avoided.

To illustrate my method: Cut enough clover the first day to make 150 cocks. We wish to have that pretty well wilted, and that is all two or three hours of good hay weather will do. We go out after dinner and cock the hay up in medium sized piles, and put on the hay cap. The hay caps that I use are made of cotton cloth which you can get at your dry goods store — not an expensive article, only costing five or six cents a yard, one yard square, fastened down by a little weight attached to each corner. The second day we cut as much more, the third day the same, putting up about the same number each day. If we have more hay it requires more caps, and we must cut more; we have to guage our work according to the quantity we have to handle. The morning of the fourth day, if we have had good weather, we remove the caps from the hay cut the

first day, and open that hay for the purpose of letting the moisture out. It has been sweating there and heating. We do not tear the piles to pieces, but make four or five forks full of a pile, take them off in flakes, as the pile is settled quite hard. We turn those flakes bottom side up, and loosen them up a little. In two or three hours of good hay weather it is perfectly made clover hay, will not reheat, but retains its foliage and bright color and feeding value. The caps that we have taken off the hay in the morning are used on the hay we cut on the morning of the fourth day. You will understand after the first four or five days we commence to draw. We draw the fourth day hay we cut the first, the fifth day we draw the hay cut the second day and so on until done, cutting and drawing every day. We use the hay cap as a preventive to guard against foul weather. That hay is kept in these flakes until it goes into the barns. When pitched onto the wagon it handles very nicely. It is taken off with a hay fork at the barn, dropped into the mow; the man in the mow picks the flakes up and mows them away, making light and pretty work compared with the old laborious and discouraging work we used to have in the clover field.

You will find the hay caps very handy and convenient to have around, and they can be used for a variety of things, and in the fall your wife can use them in the garden and on her flowers.

DISCUSSION.

The President — Do you use a tedder?

Mr. Everett — No, sir, I do not. I never had a hay tedder. I would not give a dollar for one with this method. I would rather put the money into hay caps. I neglected to say that I have a sample of clover hay with me, made by this method. [Mr. Everett here exhibited a very fine sample of hay taken from his mow.]

The President — Would your heavy clover be wilted? In case of heavy clover, would the under clover wilt sufficiently so as to be cocked the first afternoon of the cutting?

Mr. Everett — It will not always wilt, especially where it is so heavy and the mower has bunched it somewhat, and I find it will not wilt on the under side, but generally it is wilted sufficiently for my purpose. I would as soon put it up without wilting, if it handled as well, but when wilted it handles better.

Question — You speak of weighting your caps. How do you weight them?

Mr. Everett — I use a little pebble, one at each corner of the hay cap. They weigh about four ounces, and can be picked up in any gravel pit. They are fastened to each corner of the cap by means of a little piece of the same kind of cloth. Make the piece large enough to gather around the stone, tie a stout string around the sack, then fasten to each corner of the cap.

Mr. Emerton — Is that better than to put sticks in the corner?

Mr. Everett — Yes, it is much better, as the strings and weights are more easily adjusted. It is considerable work to adjust the pin, and in winds they would work loose and flap over.

Prof. Henry — How tall are those hay cocks after they have settled?

Mr. Everett — Not over two feet; they will settle down close to the ground; so the weights at each corner will come nearly down to the ground.

Mr. McKerrow — How soon after piling do you think it sufficiently sweated to air it?

Mr. Everett — That depends almost altogether upon the weather. Three days is usually long enough.

Mr. Anderson — What do you do when you have so many days' cutting, and there comes a rain shower?

Mr. Everett — We simply do nothing but wait until the rain is over; and as soon as it clears off we take off the caps and open it. We find the hay dry in the inside, it will only be wet on the outside.

Mr. Anderson — Do you cover it with the caps again?

Mr. Everett — No sir, not the second time.

Mr. Welch — Do you have any trouble with the wind blowing the caps off?

Mr. Everett — Not at all.

Mr. Fleming — Do you find the lower strata is affected by contact with the ground?

Mr. Everett — Only in very wet weather; then we find a mould on the under side.

Q. — Have you stated what the cost of these hay caps is?

Mr. Everett — Five or six cents a yard, one yard square Buy it by the bolt and tear them off, one yard square.

Mr. Arnold — I would like to know if this will be practicable for farmers farming on a large scale. I understand this method is for a small field of clover. On how many acres have you used this method?

A. — Fifteen.

Mr. Arnold — How many caps do you use?

Mr. Everett — 500.

Mr. Arnold — On sixty acres you would have to use four times as many?

Mr. Everett — 2,000 caps? No sir. I know a man in Massachusetts who is one of the best dairymen and farmers in that state. He raises fifty acres of clover every year, cuts and puts up 150 to 200 tons, and uses 1,000 hay caps.

Mr. Fish — Do you ever practice, before you put it up, letting it stand in the tumble until sufficiently cured to go in the barn?

A — No sir.

Mr. Fish — The best success I ever had I had in that way. Let it get about half cured before putting it in the tumble, and not disturb it again until I took it in the barn. I think that method is preferable to opening it out.

Mr. Everett — That method would be all right if we could be perfectly sure of good weather. When it is partly cured, a good heavy rain does not improve it any.

Mr. McKerrow — Have you ever had any experience such as having two or three days wet weather after you had it in cock?

Mr. Everett — Yes, but the hay will be but little damaged, and that on the outside; the cloth is water-proof.

Mr. Allen—I am a clover raiser. I believe they sometimes regard me as kind of a clover crank, and my method is somewhat different from this gentleman's, Mr. Everett's. I want to give emphasis to the clover raising business, and to the idea of using clover hay as the best hay that can be used for feeding cows or any kind of ruminating stock. I cut in the morning, as Mr. Everett does, and then I use a tedder immediately after the mower. I do it for the reason that the mower presses it down upon the ground, and as my clover grows very strong now—my land is quite rich, to get the air in I use the tedder immediately after the mower. I then let it remain until about three o'clock in the afternoon, it has got dried out considerably, but not enough so the leaves and blossom will fall off. Then I rake it up into small winrows before the dew begins to fall, and as the rake is discharging itself, it inverts and turns the ground side up, consequently it is not injured by coming in contact with the dew very much. The next morning, as soon as the dew is off, I double the windrows up, drawing far enough each time with the rake so as to start the second one, and turn it bottom side up. That exposes it to the atmosphere, and in that way it gets dry enough so it can be drawn pretty readily the second day, and I don't get it dry enough so that the petals or leaves fall off. Mr. Everett has expressed my opinion exactly with reference to the time of cutting, except in this way: If you have a large crop to cut, you cannot cut it all at one time; you would have to commence a little earlier, if for instance you had 60 or 70 acres, because some of it will get too ripe, and for that reason, I would recommend commencing as soon as the blossoms begin to appear and before you get through your 60 acres, some of it will be too ripe.

Mr. Everett—I have a rule to go by, that is, commence when our clover field looks about two-thirds in bloom. I do not raise as much clover hay in acres as I used to. Where I once raised 30 acres I now raise 15. It has been a matter of dollars and cents, and we get feeding value now from 15 acres that we used to get from 30.

The President—Has any one here had experience in put-

ting green clover, absolutely green, into a barn loft that is tight—close?

Mr. Everett—I have had a limited experience in putting green clover into a barn, and never found any certainty of success, and have never seen a man yet who claims there is certainty of success by treating it in that way—unless by the silo, and in that way I have seen good samples and poor ones.

Mr. Wilson—When do you put those caps on? Immediately, or have somebody follow around and put them on?

Mr. Everett—The caps are distributed by the man that rakes the hay after the hay is put up, thrown from the horse-rake and distributed.

Mr. Allen—Do you know that good clover hay is the best possible food you can give to a milch cow, to give the best aroma to the milk?

Mr. Everett—Yes.

Mr. Allen—Is there anything better?

Mr. Everett—Not that I know of. I prefer it for all kinds of stock.

Mr. Fish—Why is it that you always cut your hay in the morning?

Mr. Everett—I cut it in the morning so as to be able to put it up, get it under the caps the same day.

Mr. Allen—I put on a mower at about four o'clock in the afternoon, mowed down a good piece at night, and had it ready to tedd the first thing in the morning. I can very often get the same hay in the next day, with a great deal less labor. If the next day is sunny I can put it in, and save all this labor of covering with hay caps and getting it out of the storm. If it comes a rain these hay caps don't cover the whole tumble. What runs off the hay caps must run down to the bottom of the tumble of hay, and if four days cutting hay, if there comes a long rain, must be a great damage. By cutting in the afternoon and getting in the next day, it seems to me, we would save a great deal of labor, and in case of a wet spell, a great deal of damage.

Sec. True—I am afraid we lose sight of what I consider the cardinal principle involved in Mr. Everett's manner of

making hay. We all know that our hay or grain must sweat in the stack; if it does not, it will sweat in the mow or bin. Now, the clover hay is going to sweat or heat somewhere, and by Mr. Everett's process this heating is done in the field, and when it goes into the mow there is no heating. These processes mentioned by other gentlemen, all involve the getting of the hay into the barn in a less time, I know, yet in my experience I have not been able to put hay in in this manner when it would not heat, and become more or less musty and mouldy. As shown by the sample brought here this morning by Mr. Everett, he gets perfect hay through the entire mow when it is allowed to heat in the cock before putting it into the barn.

Mr. Fish — If there is a certain amount of warmth in the mow so it settles together, does it hurt it?

Mr. Everett — Mr. Fish states a condition hardly ever reached in my experience. It does injure it to a certain extent, it gets too brown and flakey.

Mr. Bender — The point is to make good hay all the time in bad weather; and I think that Mr. Everett has covered that point very completely. The idea of cutting hay in the afternoon — I have done it — and next day had good weather, and put it up. Suppose next day we get bad weather, it is partly cured, and if it is covered with a cap it will withstand two or three days' storm. The point is to make good hay, and make it every day. We can make hay good enough in good weather. This method of Mr. Everett's seems to cover the point of bad weather, which we must take into consideration.

Mr. Snow — I would like to ask if he ever experiences any difficulty in the hay not being sufficiently cured before being cocked up?

Mr. Everett — In what way, in handling?

Mr. Snow — In curing, it is a little heavier work to handle it unless cured some.

Mr. Everett — No sir, I have tried to cock it up behind the mower; it makes the same kind of hay. It does not handle as nicely as when wilted. We can put it in nice piles and do it easily. I prefer not to have it cure.

Mr. Newton — Is that a fair sample of your hay, or a selected sample?

Mr. Everett — A fair sample. I have taken it from the stack and mow, and that is a fair sample of Mammoth clover hay. It came from the bottom of the mow, and any one can see that hay at my home in the stack and mow, just as that is.

Mr. Welch — Do you think it advisable to divide up the amount of land you sow to clover, have a certain amount of medium and a certain amount of Mammoth? Some of these gentlemen think they had better commence early cutting. I think they had better have different kinds of clover, and first commence with medium clover and the Mammoth comes in afterwards.

Mr. Allen — The objection is the stalks are too coarse to make the best of food.

Mr. Welch — I think the Mammoth clover is the sweetest, and you get more food to the acre.

Mr. Everett — Cattle will eat medium clover closer.

Mr. Beaumont — I am confident hay caps are good on a small farm. I have used them nearly twenty years ago, also on barley. Those days they cost more than now, cotton cloth is cheaper now.

Mr. Allen — I want everybody to get converted to clover hay, anyway.

A Member — I would like to ask the gentleman if he considers clover a preventive of the depredations of the chintz bug — if he knows that to be a fact from actual experience and observation.

Mr. Everett — It is generally conceded in the southern part of the state by our farmers, that clover is a preventive of chintz bugs. That often when they sow it every year they have no trouble with chintz bugs. Some of my neighbors have lost a great deal from the ravages of the bugs where there was no clover, and some sow salt as a preventive, but I prefer clover every time.

The President — I am requested to announce that there

will be a meeting of the farmers' alliance in this room from 1 to 2 o'clock to-day.

I am also requested to announce that there is an exhibit of fruit in the south end of the basement which is quite interesting, and a great many of you have not yet seen it.

The next paper will be upon the subject of

ANOTHER YEAR WITH THE SILO.

BY MR. H. C. THOM, Dairy and Food Commissioner.

This means something new about the silo. If the truth *only* could be told about the silo it would be something quite new. As a sequence to the premise there is but little to say. The silo needs no defense. It now stands uprightly on four legs. The person who has given it a fair trial who is a "kicker," is yet to be discovered. There are legions who know that a silo is a fizzle who have never seen one. A man who gets "slewed" once in a while makes a first-rate temperance lecturer. The red cob "B. & W." ensilage is the best variety to plant south of Lake Winnebago. North of this point, plant heavy foliaged dent. It don't pay to plow under manure. Plant early, in drills, three feet ten inches apart, kernels ten inches distant from each other. Harrow until the plant is four inches high. Keep the team off when the ground is wet. Stir the surface with the cultivator. If you wish to drain the land put in underground tiling. It is a failure to dig ditches between corn rows with a cultivator. It pays to hoe once before going through the last time with the horses. Run the rows north and south, if you can, without breaking you up in business. Wait till the grain dents and then cut with the reaper. Yes, it *can* be done with a reaper. Buy an old Champion self-rake at an auction; cut twenty inches off the bar, rig a platform to catch the falling stalks and go ahead. Cut down enough in the morning to last the day. Don't spent half the season and $40 to invent a rack that drags on the ground. Use trucks with a flat topped hay rack. Wagons have no busi-

ness on a farm. The stalks have to be raised to a level of the cutter table. It don't cut much of a figure whether this labor is done in the field or at the barn. Drop in small gavels that can be lifted by one man at a single load. The best place for a silo is in the barn. The reasons are obvious. Make it air tight and pressure proof. Partitions and binding rods are a curse. Packed clay makes the best bottom. Have the floor higher than the outside ground level. Water won't run in. Stone walls ruin silage. Bevel the inside corners if they are right angled. Fill behind the bevel boards with sawdust. Chimneys don't improve a silo. Build longer than wide and deeper than long, if convenient. One layer of ten dollar lumber nailed to the studs and then covered with tin makes a good inside.

It takes seven men, two teams and three wagons to rush the filling. Steam is better and cheaper than horse power to run the cutter. The cutter knives should not be less than fourteen inches. If you have a cylinder cutter run the rollers slowly and take out two knives. Long cut silage keeps better and makes feed as good as half inch hash. It requires less power to cut long than short. Begin filling Monday, house the cutter and pay the gang before Saturday night, if possible. Keep a man in the silo distributing the grain evenly over the surface. He should walk thirty miles a day to keep the fodder packed. If he is found asleep, discharge him so that your neighbor can employ him. No cover is required to preserve the silage. Let nature stamp your labor with a seal. Give cattle as much as they will eat up clean, morning and night. Feed straw or hay after tea. Put straw in racks in the yard for their use daytimes. Use straw refuse from mangers for bedding. Cattle can be brought out in good condition in spring on silage and straw, if intelligently fed. Barley straw is better than oat straw when fed with silage. Horses should never be fed heavily with silage. Always place it in the feed box, and often. A dozen times a day won't hurt. Feed sparingly to mares in foal. Nothing is better for weanlings. Sheep grow lazy, pigs thrive on it for a change and hens eat it with impunity and lay hard shelled eggs. The

upper teeth of winter calves never get sore on this delectable food. Butter never discovers the source from whence it came, but a slight silage taint follows milk that is immediately submerged after milking. I trust, gentlemen, that you all thoroughly appreciate the advent of this economy to Wisconsin feeders and dairymen, and that you will, with me, reverently lift your hat to this important factor in successful agriculture.

DISCUSSION.

Mr. Matt. Anderson in the chair.

Chairman — Any gentleman present wish to ask any questions?

Mr. Bender, of Oconomowoc — What will it cost, a square of ten feet inside, to cover it with tin?

Mr. Thom — Just about as much as it will to put on a layer of paper and $12 lumber the second course inside.

Mr. Bender — Did you paint the tin inside after putting it in?

Mr. Thom — I never have tinned one. I have been out two or three times to inspect the one at the station; they paint that regularly each year.

Mr. Goodrich — Do not you want to modify that statement a little in regard to planting B. & W. corn on all sorts of land, and all sorts of seasons?

Mr. Thom — No.

Mr. Goodrich — It is a failure with me in Jefferson county, B. & W. corn.

Mr. Thom. You get it too close together in the row.

Mr. Goodrich — I planted it four years; one year it was a success, but three years it did not produce as much cattle food as ordinary dent corn.

Mr. Thom — I tried all kinds of corn, all varieties, and all kinds of ensilage, and I have yet discovered that variety in southern Wisconsin that will take the place of the red cob B. & W. I never ran your farm, Mr. Goodrich.

Mr. Snow — Can you report any experiment in feeding it to sheep?

Prof. Henry — The last report opens with that sheep feeding experiments, in which reports the ensilage feeding trials are given. The results were exceedingly favorable, and our sheep feeding work this year is in the same line again, favorable to ensilage feed for sheep.

Mr. Allen — In what condition of ripeness would you have the corn put into your silo?

Prof. Henry — At about the stage at which it should be for early shocking. As early as it should be cut and shocked to the best advantage of the feeder. I would say here that our reports and bulletins are free to anybody upon request. They contain experiments in sheep feeding, and in a great many other lines.

Mr. Fleming — I would like to say a word in regard to the maturity of the corn. Mr. Thom's premises are correct I believe, when he states if B. & W. corn can be raised in this climate to a required stage of maturity, that it is the most desirable corn. I am satisfied such is the case with him upon his farm in Rock county; but my observations through many parts of the state have led me to believe it is not correct in other sections, and where that corn will not mature, I am decidedly opposed to its being raised for silo purposes. I have put it into my silo one year, and it is the only year out of six that I was dissatisfied with the results. A portion of my corn crop, of the dent variety, I also put into the silo, and there was a marked difference in favor of the dent corn which I siloed. Since that time I have adopted the dent and flint varities, and am unable to choose between the two. I realize I cannot produce as much corn per acre from the small variety, but I also realize that I get a better quality; but I repeat, it is a question in my mind between those two varities, which I will hereafter choose for permanent silo. But it is a fact that you should all bear in mind, that if you are going to have success with the silo, that the corn, whatever variety you use, shall have reached maturity before you silo it. I believe that is the great principle connected with a successful silo, and for that reason I wish to call your attention to it, and hope that you will not go away with a false impres-

sion. Understand, I do not dispute Mr. Thom's premises, because I know that variety of corn will mature upon his farm, and for that reason he has advantages which many of us farmers in other parts of the state have not.

Prof. Henry—The farmers here who wish to see the silo that is partly lined with tin, can see it at the university farm. It is in its experimental stage yet. You will see back of the tool house an iron lined silo. In that you will see pure clover silo. I should prefer one tinned, put up in that shape to two put up as our silo is. You will see a wall of silo covered with a white mould like a cheese that has been cut. When we shave off the mould, the good silo lies behind. It shows me we ought to have a longer, narrower silo, so we could feed from wall to wall, as we advance. We ought not to have the silo too wide, but if it is square we should put a partition across the middle. It is lead that is used, not tin, and lapped over just as the tinner does a roof, and it is bought with the lappings made, so a man can do the nailing himself. I think a silo for thirty cows ought not to be over twelve feet wide.

A member—Do you then recommend opening it at the end, instead of the top?

Prof. Henry—I should feed the ensilage from the end; you are then displacing none of the ensilage, except that you are going to use, and not exposing a large quantity to the air at one time. Our ensilage this winter smells sour, for the reason we had B. & W. corn that did not ripen, and we had enough of this that when mixed with the yellow dent corn that was matured enough, it gave the whole a sour smell. Our cattle like the ensilage. You will see two cows there eating 80 pounds of the ensilage a day. We let them eat all they want; we are filling them up.

Mr. Thom—That man don't live that has a hundred head of cattle to carry 200 day, that can put the feed in one silo and feed it all from the top, without some of the ensilage smelling.

A member—Then I would put it in two, that I might feed from the top.

Mr. Allen—You say some of that ensilage got sour?

Prof. Henry — It is all sour.

Mr. Allen — Can you make absolutely good fodder from that ensilage?

Prof. Henry — We have done it.

Mr. Allen — Can you get more nutritive value from an acre of B. & W. corn than from an acre of flint of dent?

Mr. Everett — I made some trials, the best that I could do with B. & W. corn, sweet corn and flint, all put into the silo. Of course the stages of maturity differed somewhat in the different varieties; but it was put into the silo in layers two feet thick, alternate layers of each kind, two feet of one kind, two feet of another kind, clear through the whole silo. I will say here, the B. & W. corn I estimate would be about 50 baskets of corn to the acre, the flint corn would have gone nearly 100, and was very well matured, hard dented. The sweet corn never was matured, and not so heavy a crop. When I made the trial I found everything in favor of the B. & W. I think in the southern part of the state the B. & W. Red cob corn is the best corn raised for the silo.

Mr. Anderson — Your soil is of what nature?

Mr. Everett — I have a clayey soil. I have seen Mr. Thom's ensilage, and I never saw better. I think my ensilage is equally as good, and it is red cob corn.

Mr. Thom — Had that B. & W. corn nearly reached maturity when you siloed it?

Mr. Everett — Just left the milk.

Mr. Thom — My experience is when the B. & W. corn is in the milk, the white, then is perhaps past the time; that is perhaps the reason you did not get as good result, you did not give the flint the chance you should have given it.

Q. — Do you put up your corn in the roast-ear stage?

Mr. Everett — I put it up at a later stage, when the corn is harder. If I was feeding corn for beef I would have it harder, but if for the dairy cow, I would have it a little more succulent.

Mr. Thom — The purpose of ensilage is not for grain, but for fodder, for fodder we can use in winter. If we want

grain we can use it to more advantage in some other way than placing it in the silo.

Q.— Why is it always advisable to use nitrogenous food with ensilage?

Mr. Utter — You must have some other food with it. I think that is one great fault that farmers depend upon ensilage too largely. It would be impossible to feed any kind of stock one kind of food only. It is just as impossible to feed ensilage alone, and it should only be used as a mixed food.

Mr. Thom — I think that is true; I think the growth of the silo has been retarded by that very thing.

Mr. Goodrich — My purpose in raising ensilage is, as in raising corn, to raise just as large an amount of corn as I can grow on an acre of land with as large an amount of coarse fodder as I can raise — the corn the first thing. Now, somebody told me he didn't want it so well eared, because in a good ration of ensilage a cow would get too much corn. Just look at it. We will suppose you have a ton and a half of corn to the acre, what would be dry corn; that makes 54 bushels; that is a good acre of corn. Now, such an acre of corn will produce 15 tons, or 30,000 pounds ensilage. Forty pounds of ensilage is a good big feed for a day; one-tenth only is corn, and a cow, if you feed her forty pounds, will get four pounds of corn. That is not too great. Balance up that ration with clover and eight pounds of bran, and you will have a good milk and butter ration.

Mr. Thom — But if your premises are right, you ought to husk your corn and put it in the silo.

Mr. Goodrich — No. Didn't I say I wanted as much corn to the acre, and also as much fodder as I could get?

Mr. Thom — Yes. You said primarily you wanted all the corn in it you could get.

Mr. Goodrich — And I mean all the fodder I can get with it.

Mr. Bender — I want to say with Mr. Goodrich, if you want to realize the full benefit you want the corn beyond the roasting stage, and then depend upon your silo for the corn meal the cow wants to eat. Feed six pounds of bran

Holstein Friesian Cow, Property of Gillett & Son, Rosendale, Wis.

Butter record – 26 lbs. 8¼ ozs. in 7 days.
Milk record—83 lbs. 12 ozs. in 1 day.

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and two pounds of ground oats, then you get a feed that is all right; you can make good butter and lots of it.

Mr. Thom — I want the stalk that contains the most fodder, and I am not particular about the size of the ear, or the amount of corn upon that stalk.

Mr. Linse — The corn grain part is the most important part of the ensilage with me for the cows. Once in a while my cows slacked up, did not give the same quantity of milk one day as another, and looking the thing up closely, I found that the boys got into a part of the silo where the grain is a little thinner. Of course in spreading the silo the best you can do you cannot get it exactly even, the lighter parts will get at a distance from the center, and the heavier parts in the center of your silo. Sometimes the men will not distribute it evenly. I found when we got to the better part of the silo the yield of milk was increased, and that accounted for it, the difference in the yield.

Mr. Thom — Barley is 60 cents a bushel, oats 25. A cow may give more milk on barley than on oats. It is a question of economy. It is a question whether the additional amount of milk given on barley will offset the increased cost. Nobody contradicts the premises that you can get more milk for more grain; but don't it cost you too much to get that additional amount?

THE DAIRY COW.

By C. P. GOODRICH, Fort Atkinson.

I was asked if I could write something new for this occasion — something that I had not written before. I said I would try. I have tried; but I have a strong suspicion I have made a failure. It is possible that I have here written some few things that I have not said or written before, but no doubt somebody else has said it a good many times; and I am now more than ever impressed with the truth of what the wise man said long ago, that "there is nothing

new under the sun." But there is one merit in my paper, it is very short, and if I can manage to read my own writing, it won't take long.

THE DAIRY COW.

The domestication of the bovine race from the wild ox of the old world is so far back in the dim vista of the past that its date cannot be even approximately fixed. The ancient Egyptians worshipped the cow, and the Israelites at Mount Sinai worshipped the golden calf. We look upon them with a sort of pity as idolators, but should not some of us, at the present day, rightfully be classed in the same category; for do we not worship the dairy cow for the golden calf she brings? Your humble servant pleads guilty to the charge and, more than that, he is not ashamed of it.

From what I can gather from my reading of history they were originally used as beasts of burden long years before they were developed into animals that could produce vastly more food for man than any others of the brute creation. By a gradual course of development, the dairy cow, from being barely able to give sufficient milk to nourish her offspring, can now give from six to ten times her own weight of rich milk or from one-third to one-half her own weight of butter in a year, and this is mainly produced from the grass and coarse forage of the fields which is unfit food for man.

Another type of this race of animals has been developed which will produce from the same grass and forage large quantities of nutritious and healthful meat. But the form and general characteristics of the two types are essentially different. Each seems adapted to a special purpose, and the attempt to change work one with another, that is to produce milk with a beef animal or beef with a dairy cow, generally proves a failure as far as profits are concerned.

Many attempts to mingle the two and have animals adapted to both purposes, but the result is a failure to get animals capable of the best performance in either direc-

tion, and in these days of cheap products, when only the best of its kind can succeed, the result is, the man who attempts it fails to get a fair remuneration for the food and labor bestowed. Both types rapidly deteriorate and fall back to their original state when not kept under conditions which tend to perpetuate and further develop their improved qualities. In proof of this I will cite you to the wild cattle on the pampas of South America, which are descendants of domestic cattle which a few hundred years ago escaped from their owners. The cows barely furnish milk enough from their diminutive udders to nourish their young and all are noted, not for their round and beefy forms but for their fleetness of foot, strength and endurance.

The most profitable dairy cow is the one that will convert her food into the product that will bring the most money in the market. She must be a machine that is capable of consuming and digesting the largest amount of food in proportion to her size, so that the food of support will bear as small a ratio to the whole amount of food consumed as possible. Butter fat is by far the most valuable solid in milk, and this varies, the chemist tells us, from 2 per cent., the lowest, to 10 per cent. in different milks, while the per cent. of the other solids varies but little in different milks, the range being from 8 to 11 per cent. Now the cow that makes the greatest proportion of her food into butter fat is the most profitable cow. This is not only theory, but is borne out by facts. The most wonderful butter producers on record all give remarkably rich milk, some of them milk as rich as ordinary cream.

I have just been looking at the most profitable butter cow I am acquainted with. I will briefly describe her. She is of medium size, has a long face, broad muzzle and strong jaws, a slim, ewe neck, thin, sloping shoulders, large girth and immense abdomen. She has a sharp, high backbone, thin hams, giving room for the large udder which runs well forward as well as back. She is a voracious eater and gives a good quantity of rich milk, which never makes less than 7 pounds of butter to the 100, and sometimes consider-

ably more. She has a general loose, relaxed and bony appearance. She never had, and I don't believe ever will have, an ounce of surplus flesh on her. She is very sensitive to cold, cannot bear rough treatment or exposure to storms or inclement weather. She is so far from being hardy enough to withstand the fare, that some farmers give their cows, that she would probably die on it while the scrub cow would seem to do fairly well. But she has got the kind of hardiness that will enable her, with right feeding and care, to produce 3 pounds of butter per day. That is the kind of hardiness that pays. Now this is the exact opposite of the beef animal.

Some of you, by this time are saying, "I guess you are a Jersey man." To a man up a tree it may look so. It certainly will look so if he can see more of the dairy type I have described in that breed than in any other, and I have a suspicion that he will find it so, though other breeds abound with remarkably good dairy animals. But all Jerseys are not good dairy cows. Through some mistake in breeding or feeding, they have been changed towards the beef type, so that they have too much of the blocky, smooth and compact form of the beef animal, so that although the milk may be rich the quantity is too small to make them profitable.

In breeding for profitable dairy cows, be guided solely by the value of the product as compared with the value of the feed (when judiciously and liberally fed), of the animals bred from, and also of their ancestors for generations back. Add to this careful and gentle handling and feeding with the best milk-producing foods from calfhood up, and you will be reasonably sure to get good dairy animals. Do this and the form will be all right. It will be the dairy form whether you have thought of that in the selection of the animals bred from or not. As to color, that is of no consequence; if the performance at the pail is satisfactory, let the color take care of itself.

I may be an enthusiast on the subject of dairying, and if you think so, make what allowance you think right for what I am about to say; but I am going to give expression

to a few thoughts which present themselves to my mind at this time, and consideration of which may not prove an entire loss of time. I believe there is no state in the Union quite so well adapted to dairying as Wisconsin. None her equal in all of the three great requisites—soil, climate and water. I believe if our people would make the most of her natural advantages, and make the most possible of the dairy cow, the time will come when Wisconsin will head the list as regards the wealth, intelligence, prosperity and happiness of her inhabitants.

The dairy cow is a great promoter of industry, for she requires daily and constant attention to make her profitable. She is, therefore, an antidote for idleness, that great nursery of poverty, immorality, pauperism and crime. She obviates the supposed necessity for the man of moderate means running up large debts at stores or other places for the necessaries of life, for the income from her, coming in weekly or monthly, enables the dairyman to pay as he goes, thus inducing habits of economy and discouraging and rendering unnecessary the habit of spending money before one gets it.

Through the agency of the dairy cow the soil, instead of being robbed of its fertility as it is by some systems of agriculture, can by proper management, be made to be more productive each year, so that the dairyman, after drawing a rich reward for his labor through his lifetime, will leave a mine of wealth stored up in the soil for those who come after him. This picture is in strong contrast with that presented in some parts of the south and east, where the barren and deserted fields and neglected buildings going to decay, tell a sad story of the poverty of the inhabitants entailed on them, in part, in consequence of the soil-robbing practices of the earlier occupants of the land.

The dairy cow is a great promoter of Christianity. You may laugh at the idea, but to my mind, its logic is irresistable. The successful dairyman finds that it pays him in hard cash to practice all the Christian virtues with his cows. He finds that kindness pays; he practices kindness

first with his cows, then, as he develops a kindly disposition, with every living thing he comes in contact with. "The merciful man is merciful to his beast." The rule works both ways. His family feel the influence of the kindness thus developed, and his home is happier.

He finds it pays to be generous with his cows, generous with their feed, generous with their bedding and generous with everything that goes to make them comfortable and contented. He thus, insensibly perhaps, develops a generous nature, and a disposition to do as he would be done by. He finds that patience with his cows pays. In like manner a patient disposition is cultivated.

Let any one who will, call me a crank because of my profound respect for the dairy cow, yet, all the same, I have an abiding faith that she has the power, if we will only accept and encourage her, to be the Moses who shall lead us out of the wilderness of debt and discouragement in which many of us are wandering, unto the promised land literally flowing with milk — and all the good things of this life.

DISCUSSION.

Mr. Wilson — I would like to ask Mr. Goodrich how a man can cherish a Christian spirit with a cow when she puts her foot into your lap?

Mr. Goodrich — If that man has brought up his cow like a Christian, she won't do it.

Mr. Wilson — Don't you have to replenish your herd by buying cows?

Mr. Goodrich — No, I raise my own cows; I have not bought a cow for years, and I don't intend to.

Mr. Emerton — I have had a little experience in raising cows, and I have come to the conclusion that you can't buy a good cow, you must raise it, and commence your kind treatment at an early period of the life of the calf, and don't stop, and you will get a good cow, and better and better every time.

Mr. Goodrich — That is the idea, if the ancestors are all right.

Mr. Hacker — I wish to state that I have been quite a number of years engaged in raising and buying and selling Jersey cattle, and it is well known they are the most nervous, sensitive, and you might say, if not properly treated, the most vicious breed of cattle. A year ago last August I went to Kentucky and bargained for a carload of heifers. They had been all summer up on the side of the mountain where they hadn't seen anybody, hadn't even been salted, and they were exceedingly wild. We managed to get them into the car, and brought them on to my farm. Some of them were so wild we had to lasso them after we got them into the basement, and they were perfectly crazy. They would hook the manger, and kick out straight behind like a horse. The worst one amonst them we had to lasso and bring to the manger by a pulley. In less than two days I could take her by the horns and lead her out to the tank; it was simply kind, patient, humane treatment. All I had to do was to convince that heifer I was not going to do her any harm, and the victory was won, and she was my servant, and I could do anything with her.

Mr. McKerrow — I would like to ask Mr. Goodrich if he believes it a good plan to select animals and breed in the same lines right along.

Mr. Goodrich — I do. My cows are all descendants from an Ayrshire cow my father gave me when I was a young man. I made a great many mistakes in breeding, crossed some with not good milking breeds — I dare not call their names, but with breeds that were not good milkers — but still there is a lot of that old Ayrshire blood there, and when I cross it with the best milking stock I can get, it show right out; but of course there is a great deal in bringing them up and feeding the right kinds of food, and giving them the right kind of care.

Mr. McKerrow — Do you believe that the bringing up of the mother will show in her offspring?

Mr. Goodrich — I certainly do.

Mr. Hacker — The peculiar condition of a good breeding cow while carrying a calf will have the effect of diverting

the habit of that calf in a different direction than the breed will indicate.

Mr. Goodrich — I don't know but that is getting into deep water. I think if you take the best milk cow in the herd, and she should be dry a year, and you then fat her up and make a beef animal, her calf would have more of a tendency to be a beef animal.

Mr. Hacker — It is necessary for the cow to keep at work at the dairy if you want to breed a good dairy calf.

Mr. Allen — I am aware I shall differ from the views of many persons. You spoke of a cow that would give 7 per cent. of fat in the milk. There is remarkable potency in that cow, that enabled her to do that thing. The question arises — Suppose from that cow a male calf should be produced, and that crossed upon a good Short Horn milking strain of a cow. Don't you believe you could get a first class animal in that way, for milk?

Mr. Goodrich — I believe in crossing two good milking breeds that give good milk, the descendants would stand a pretty good chance of being good milkers. I won't say anything about breeds, but a good cow is a good cow, and if she has a long line of ancestors back of her that are good, she would be apt to breed well.

Mr. Allen — There being potency on either side, the Short Horn being a much more vigorous animal in all the characteristics that make vigor, would not the product of such a cross be a valuable animal?

Mr. Goodrich — If the Shorthorn cow belonged to a family that would give the greatest returns in butter fat for the food consumed, she would be a good cow.

Mr. Convey — Don't you consider you could get better results by breeding in line, than crossing breeds?

Mr. Goodrich — Line breeding is my way.

Mr. Convey — What percentage of culling do you find necessary to keep up the present standard?

Mr. Goodrich — I shall sell 20 per cent. of them off in the spring. I sell off some every year. I am saving the best all the time.

Mr. Convey — The question I asked was, do you find it necessary to cull in order to keep up the present standard?

Mr. Goodrich — I do; I cannot get all good cows, all first-class, some are beter than others, I let the poorest go.

Mr. Anderson — I would like to ask Mr. Goodrich what he calls a first-class cow. How much butter should she produce a year?

Mr. Goodrich — Ought to produce 300 pounds.

Mr. Convey — With your kind of feeding, ought not she to produce more?

Mr. Goodrich — Yes, sir; she ought to. My cows have produced more.

Mr. Anderson — I want to say that Mr. Goodrich has been producing considerably over 300 pounds from his cows each year.

Mr. Bender — You say you have followed right along in one line from the cow your father gave you?

Mr. Goodrich — Mostly. I did buy some cows.

Mr. Bender — Take a period of ten years, what has been the average ratio of increase per cow per year.

Mr. Goodrich — I don't know as I could give the figures. I think eight or ten years ago the product was about 250 pounds. I have not got the exact figures here with me.

Mr. McKerrow — What do you credit the increase in yield to — improvement in the breed, or to the food?

Mr. Goodrich — I think I know a little more about taking care of cows. The highest product I ever reached was during the time I had personal supervision of my herd right along for three years; since then I have not been attending strictly to the business all the time myself.

Mr. Fleming — What did they do then?

Mr. Goodrich — 357 pounds to the cow.

Mr. Fleming — How many cows?

Mr. Goodrich — 15 cows.

Mr. Allen — How much did you get a pound for your butter?

Mr. Goodrich — It has sold ever since November for $2, the fore part of last November for $2.40 a box, what is supposed by some credulous persons to be eight pound boxes,

they do not hold but about seven and one-half. When the highest Elgin butter was 26 cents, this was $2.40 a box, which is to me 32 cents.

Mr. Bender — Is that above your commission?

Mr. Goodrich — No, sir; what it sold for. Freight and commission take out 2 cents a pound.

Mr. Allen — Then the box beside.

Mr. Goodrich — Yes, but whenever you sell butter you have to have a package. These boxes cost a cent a pound.

Mr. McKerrow — What has your price averaged last year?

Mr. Goodrich — Net 24 cents, after all expenses were out, for the year 1890. I turn out nearly the same quantity winter and summer.

Mr. McKerrow — Do you think you can make first-class butter without giving this cow first-class feed?

Mr. Goodrich — No, sir.

Question — Do you think it is because you make better butter that you get a better price than the Elgin?

Mr. Goodrich — I do not want to answer that question. I do not think it is better than lots of butter in the country. I suppose it must be pretty good, but I suppose there are lots of men here that have just as good butter.

Prof. Henry — We had six packages of butter a week shipped from Chicago to our butter school for four weeks, in boxes of the size that Mr. Goodrich described, for the purpose of furnishing samples for our students to inspect and grade. Now it happened that one of the first packages of butter we had from Chicago was from Mr. Goodrich's farm, and it was one of the very finest packages that came up, and was scored by experts, and the class and others well toward 100 or perfection. It was very quick flavor, very excellent grain; the brine on the back of the trier was as clear as good spring water, and it was nicely salted. Its color was a delicate straw. The commission man who sent it said, "This represents the best package of butter we can get from your state."

A rank smelling butter advertises itself, and no one can sell it, whether it be Mr. Goodrich's make or any other man's, and I want to give Mr. Goodrich this credit — I

don't believe there is a man in Wisconsin, that most of su can learn more from about dairying, than from him.

Mr. McKerrow — Don't you think you could shove in just a little package a little below the highest grade, and get the same price?

Mr. Goodrich — I would not try it for $500.

Mr. Carr — I would like to ask how you set your milk, and the process of churning.

Mr. Goodrich — If I am going to tell, you will have to let me go on without interruption. I am dreadfully easily upset. I tried, I want to say, almost every kind of setting that has been tried, and I don't say that mine is any better than anybody else, but I do it in the way I do to save labor. I set the milk in shallow pans. I have four pans two feet and a half wide and five feet long and six inches deep. Each pan holds a whole milking of the herd. They are arranged so that water runs underneath in the summer time to keep the milk at the temperature of 66 degrees. In winter I have a coal fire in the room, and keep the temperature of the milk at 60 degrees. That is the aim all the year around. At that temperature the milk generally just begins to turn acid in 36 hours. The cream begins to thicken, that is the time to skim. The cream is kept in the room at a temperature of 60 degrees, each skimming stirred and mixed up with the previous skimming. The churning is done once in two days, or four times a week, so as to get by Sunday, the last skimming is not churned unless it happens to be a little more acid than usual.

I use a revolving, square-box churn. The churning is done by wind; that is to save work, because it don't cost anything, unless the wind fails to blow, then a man has to turn the churn. It is churned at a temperature of 65 degrees in the winter, and from 60 to 62 in the summer. The churn is run until the butter comes in granules — when I do it, my boys do it a little bit different — about the size of kernels of wheat. Then the buttermilk is drawn off and cold water is put in, about a pail full, say to 20 pounds; if there are 40 pounds in the churn I would put in two pails of water, revolve two or three times, then that water is drawn

off, some more water put in and that is drawn off. That is all the washing I do. The water is of the temperature of about 46; that water cools it down. You will observe that is not the orthodox way of making butter, I have got to tell the truth. That does not wash that butter perfectly, because it is in too coarse granules; but if I should wash that butter in four or five waters when the butter was as fine as clover seed, I know just what would happen. I should get a letter from Chicago saying, "Some of the customers say your butter lacks flavor." You can say what you mind to, customers want a trace of buttermilk flavor. That is left in, a little of it. The public taste demands the least faint trace of it, that is, the customers we get. The experts have always scored it well enough to suit me, and way up high on flavor, and they are judges of what the market demands — not what some particular individual demands, but the general market. Now I take it out of the churn and put it on the butter worker and work in an ounce of salt to a pound, and let it lie from two to four hours, then re-work and pack it. When in talking of butter making I say "I, "that usually means my wife. Remember that "I," comes so handy I can't help using it.

Mr. Bender — How long do you let it remain in the churn to drain after the last washing?

Mr. Goodrich — No time at all. I take it out and let it drain on the butter-worker.

Mr. Bender — How often do you work it on the butter-worker?

Mr. Goodrich — Just enough to evenly distribute the salt. I have some boys that think they know as much about it as their father; I don't know but they do. The way — one I think is making it now; he stops the churn a little quicker, puts in some brine or salt, then washes it twice and salts it in the churn; he puts in about one and a half ounce of salt in his, puts some water in and lets it stand in the churn two to four hours, and takes it out and works it. The result is almost as good, only I think the old man, or my wife I should say, gets it salted alike every time, and the boy don't, because he can't tell how much water there is in the

butter. He does it that way because it is less work, or he thinks it is.

Question — How do you prepare your boxes?

Answer — They are lined with parchment paper not wet or soaked at all; they are made of elm. If they are soaked with brine or water the brine will come out around every tack or nail, and make a black spot. Just brush the dust out and line them with parchment paper, they will hold the brine, and the box goes to market looking bright and nice.

Mr. McKerrow — Do you use any ice?

Mr. Goodrich — I do not.

Question — Is the butter of the same quality when the boys make it, as when you do?

Mr. Goodrich — I cannot see any difference. There has never been any complaint. They make it about the same as I do. They leave it a little finer. I am not expert enough to see the difference, and have not heard of any fault being found.

Question — How long does it take to churn?

Mr. Goodrich — I think about 40 minutes now; in the fall, before I started away from home, it took 20 to 30 minutes; the cows have been giving milk longer.

Question — Do you use any water in the churn before commencing to churn?

Mr. Goodrich — Put in enough hot water to raise the temperature from 60 to 65. Put the water in as hot as you can. I suppose you will all look wild for fear hot water is going to injure the grain of the butter, but I have failed to discover it. It won't be too hot taking it from the kitchen out to the milk house. Turn it in and stir the cream vigorously enough to raise it up to 65.

Mr. Allen — You don't skim your milk until it is sour.

Mr. Goodrich — Not usually.

Mr. Allen — You don't want to skim it sweet?

Mr. Goodrich — I don't care anything about its being skimmed sweet; but when in shallow pans you can't do well until the cream has thickened a little.

Mr. McKerrow — How deep is the milk in the pans?

Mr. Goodrich — About three inches.

Mr. McKerrow — Your method of making butter was to wash first in brine?

Mr. Goodrich — No sir; I generally put in a little salt so the butter floats a little.

Mr. McKerrow — The boys churn it finer grained and wash it in brine?

Mr. Goodrich — No, they do not. I think they put in a little salt so it will float good.

Mr. Bender — I think it is absolutely necessary to put in salt, where the churn is stopped when the granules are small, or the butter will run out with the buttermilk.

Mr. Allen — Would not it be better to make the brine before you put it into the churn, and then put the brine into your butter.

Mr. Goodrich — Do you mean to inquire about the brine salting?

Mr. Allen — Yes sir.

Mr. Goodrich — My oldest son, in western Iowa, was one of the original brine salters. There was an article went the rounds of the papers with the name of "W. B. Goodrich" signed to it. It was taken up here in Wisconsin and read, and I thought my boy was smart, I would try to do as he did. For six weeks I washed it before, and salted it with brine so as to save the brine for next time, and packed right from the churn. The butter had about five per cent. more water in it, and I knew it. If the customers wanted to pay me 30 or 40 cents for water, I don't know as I ought to object; but after six weeks I wrote to the commission man and told him I had changed my method of making butter, and asked him what he thought of it. He wrote back and said, "We don't think the butter is as desirable, there is too much water in it, and it lacks flavor." And the next day I got a letter from him saying, "The customers wish you would go back to the old way." Of course I did, I was making butter for them. That is all I know about brine salting.

Mr. Pease — Do you not believe that salting after drawing off the buttermilk, toughens the granules outside to such an extent the flavor is held inside more, and the water has

less effect. If you wash your butter before you add the salt brine, in that way you wash out the flavor of the butter. I have seen it tried, and my experience bears out the theory that salting the butter in fine granules with a salt brine, toughens them to the extent they retain the flavor than if washed before salting.

Mr. Goodrich — I never tried it.

A Member — There is a lady wants to ask a question how you take your butter from the churn; if you gather it there before you take it from the churn.

Mr. Goodrich — Partially with part of the water drawn off, revolve the churn a few times, it will mass together so you can take it out with a ladle. We put in color, we calcu late to have it up to about June color.

A Member — Deep setting is principally used now-a-days. What was your object in setting it as you have stated?

Mr. Goodrich — The main object was to save labor. It would cost me a great deal to get ice, as I would have to draw it nine miles, and I have it fixed so that there is no hard lifting.

Mr. Linse — Don't you think it has a different flavor from deep setting?

Mr. Goodrich — I don't know as I ought to answer. You have tried both yourself. I have a little feeling that way, but I don't know.

Mr. Allen — Have you not a spring that furnishes the water?

Mr. Goodrich — No, I have not. I have a windmill that pumps water into a tank. I have the tank set so that the temperature of the water keeps down.

Mr. Hastings — Do you not have to cover over these shallow pans to keep the cream from drying?

Mr. Goodrich — There are certain times when we have a fire there that the cream does dry some, so that there will be specks of cream when we churn, that are not churned. It is only occasionally, and we have to wash and strain those out and churn them again. That is a thing I would like to obviate, that drying over. We have partly obviated it by having an open vessel of water setting on the stove

from which steam arises. I do not want the milk covered over, and won't have it, because I know the butter will not be of good flavor.

Mr. Phillips—Don't you think using a separator would do away with a great deal of work, and you would get equally good flavored butter?

Mr. Goodrich—I have had no experience.

THE WISCONSIN STEER.

BY L. C. RUSSELL, Dunbarton.

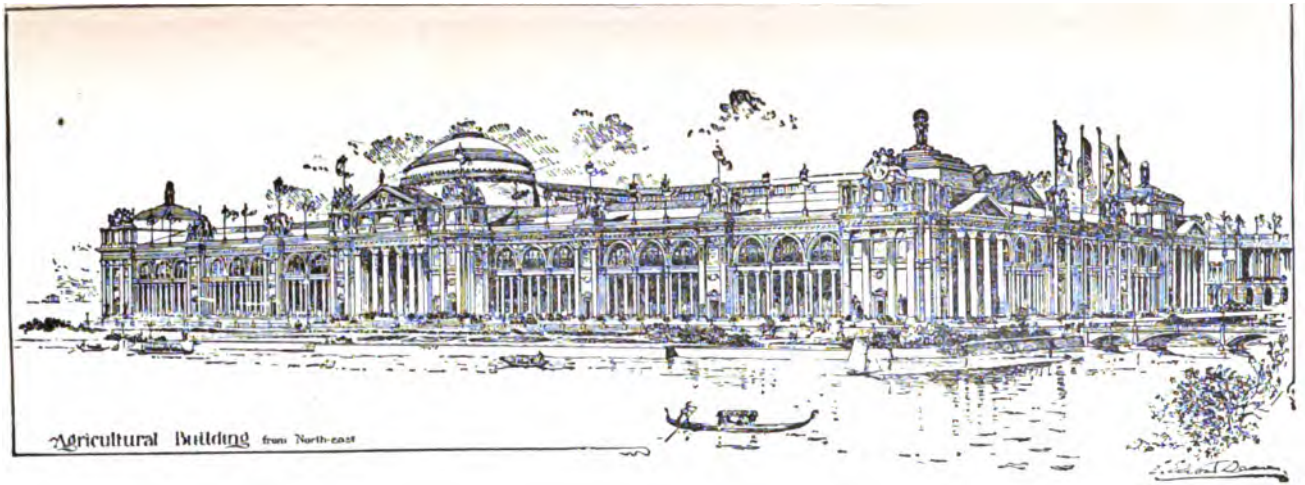
Perhaps there is no branch of farming requires greater intelligence, or more careful study, and one in which farmers universally feel so great an interest as the feeding of steers for beef; and none which if a profit is to be realized, requires more skill and sound judgment. A feeder with but little or no experience, who attempts winter feeding, is far more likely to lose than to make money by the operation, as many have found to their sorrow.

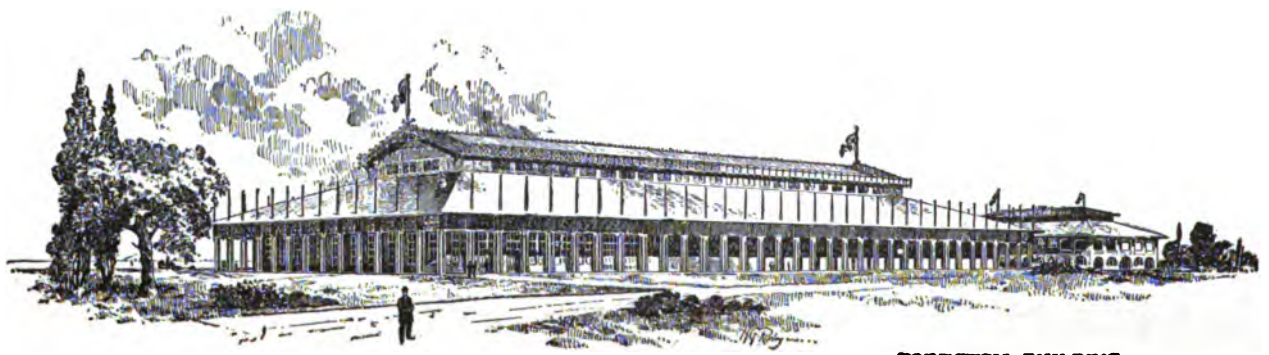
The fact that a man keeps on his farm enough cattle to consume its coarse products, does not of itself prove that he is making it profitable. There are so many questions involved in the business of cattle breeding and cattle feeding that it would be absurd to attempt to approximate the market value of a steer six months or a year hence.

WISCONSIN'S CATTLE PRODUCTS.

The number of milch cows in this state is about 700,000 head, valued at $16,386,000; other cattle 800,000, valued at $13,772,000. Total number 1,500,000, valued at $30,158,000. In the United States we had in 1880, 37,000,000; in 1890, 53,000,000, valued at $1,000,000,000—nearly equal to the national debt. But the estimated number of animals from which the beef supply is drawn, does not tell whether the supply has increased more rapidly than the demand or whether it has diminished. Our increasing population, the reduction of the beef products in the eastern states, and our

UNIV. OF MICH.





FORESTRY BUILDING,
World's Columbian Exposition.

World's Columbian Exposition, at Chicago.

fluctuating export trade, must be constantly borne in mind, if we wish to hold clear views on this important subject.

There is a growing desire on the part of feeders to obtain an approximate statement of the number of cattle in the country, and the relative number to the population for a series of years. Our rapidly increasing population since 1880, has in the United States been estimated on a basis of a 2 per cent. annual increase in addition to the immigration. We then had 738 cattle to the 1,000 inhabitants. Cattle increased very rapidly till 1885, when they reached the highest relative point of 800 head to the 1,000 people. Since 1885 there has been a heavy decrease, till 1890 they have fallen off 42 head per 1,000 capita, and this will undoubtedly continue. The cattle supply has not been so low since 1882 as it is to-day.

With the reduction in prices, the profit in cattle raising has been greatly reduced, and in many cases, it has been conducted at a positive loss. The tendency therefore, has been to sell off the stock and reduce the business; consequently the proportionate number of cattle marketed, was greater than during the years of prosperity. For this reason the market has not felt the influence of the reduction of cattle in proportion to the population which has occurred and must continue to decrease for some years to come. Take the reduction of the supply, the poor corn crop in the west and our export trade, with other causes, and we certainly must be on the verge of better prices for our beef.

I have tried to show that the cattle business is the leading industry of Wisconsin. I could show to you that this has two sides to it, one of profit and one of loss. I want to show to you that by a careful rotation of crops you can make more by having one-half of your farm stocked to steers, than by any other method of farming, labor and expense considered. It is proven every day that dairying can be made to pay a handsome profit on capital invested, and labor performed. And some claim that but little if any beef is raised in Wisconsin, except at a positive loss. The numerous separators, creameries and cheese factories throughout the state are good evidence that the dairy is profitable if judiciously managed; while it is our pur-

pose to show that raising and feeding steers is more profiteble, to the average farmer, than any other branch of husbandry, if properly conducted.

To be a successful farmer one must keep up the fertility of the soil. This can be best accomplished by a rotation of crops, clover and steers. It is truly said that it is unnatural for a farmer to get poor while his farm is getting rich, and vice versa. To be a successful stockman, you must have your whole heart and mind it the business. Give that devotion to your calling necessary for success. Go at it with a firm and steadfast resolution; without any hesitation or mental reservation whatever. By breaking up one-seventh of the farm each year planting it to corn for two years, then sowing it to small grain one year, and seeding it to clover, timothy and blue grass. Sow plenty of seed, and as early as possible. Using it for meadow two years, pasturing it two years, then breaking it up and commencing another rotation. If the manure is returned to the land each year, the fertility will be kept up and improved.

To make the rotation complete, steers enough should be kept to consume the hay, pasture, stocks, and other coarse products of the farm such as are not suitable for market, and convert the same into beef, thereby utilizing every thing that is available on the farm.

Suppose we have a farm of 175 acres, that has been farmed under the grain treatment for 20 years, and raise 100 acres corn and 75 acres oats.

100 acres corn, average 27 bushel = 27,000 bushel at 45 cts.....	$1,215
75 acres oats, average 25 bushel = 1875 bushels at 40 cts.....	750
Total.....	$1,965
Cost of raising and gathering 175 acres at $5.50 an acre.....	965
Net value of crop on the whole farm.....	$1,000

Under the rotation treatment we would work 75 acres, 50 of corn, 25 of oats.

50 acres corn, average 45 bushels = 2,250 bushels at 45 cts.....	$1,012
25 acres oats, average 40 bushels = 1,000 bushels at 40 cts.....	400
Total.....	$1,412
Cost of raising 75 acres heavy grain at $6.00 an acre...	450
Net value of crop on three sevenths of farm is.....	$ 962

against $1,000 on the whole farm, or 100 acres of grass for the steers costing only $40. This grass with the stalks and straw ought to keep forty or fifty steers the year round.

Buy your steers in the fall of the year. Get them all of one age, and as near of one size as is practicable. Saw off their horns so they will winter and feed nicely together. They will then be even, no bosses, no underlings. After getting them home make a great effort to keep them from shrinking on your hands. If the pasture is not first-rate feed hay, grain or something to keep them up in flesh, for it is a very trying time when they spend nearly all of their time bawling and walking around the fences. If they lose twenty-five pounds now (and they will with careless handling) it will take two months at this time of the year to regain what was lost.

In our part of the state we winter our cattle almost exclusively on hay, thinking it the cheapest winter feed we can get for steers. We prefer mixed clover and timothy hay to any one kind alone. Three-quarters clover and one-quarter timothy makes an excellent hay for cattle, because they relish it and will do well on it. Clover may be more nutritious, but will not be eaten as well.

What class of cattle to buy can always be answered in a general way by saying always buy a good class of steers, but it depends a little upon what you want to do with them. If you want to fatten some butchers stock, it would not perhaps pay to buy high grades when good heifers would do about as well, but if you want to feed for the export trade, pick the very best you can find, almost without regard to price. In buying steers, one must exercise a great amount of caution; remember a steer well bought is equivalent to being half sold. This will be best appreciated by those that have fed a bunch of scrub steers and put them on the market in Chicago.

The safest way is to buy nothing but what is well bred and good in every respect. Shun all lump jaws and cat ham steers, discard any that are very wild, for they are a nuisance in a feed yard. They will set the whole herd in a turmoil on every provocation. To feed cattle so they will

fatten is one thing, but to feed them so they will fatten with a profit is what every man present would like to know. To understand this is the science of profitable feeding. To feed with the greatest profit, is to get the largest possible returns from a given amount of food consumed. To obtain this it is necessary that the largest proportion of food should be converted into fat, and the smallest proportion go to sustain heat or exercise. It is therefore necessary that cattle should have warm, comfortable quarters, and be kept as quiet as possible, keeping everything from the feeding yard that will cause fright or excitement. Strangers should not be admitted more than is necessary. A warm shelter is an important factor in wintering stock. One purpose which food serves in the animal is to keep up vital heat, and food used for that purpose cannot be utilized to replenish waste of tissue, or add muscle or fat.

Cattle should at all times be kept comfortable, and every thing which tends to their comfort is profit to the owner. We all know that it is much easier to keep up the heat when the furnace is hot, than to warm it when every thing is cold; the same thing holds true with cattle. The same person should do all of the feeding and caring for fattening steers, and if possible, he should be the owner.

The steer producer asks himself the question many times, whether he had better sell his steers as stockers, or would it be best to fatten for the market and feed 40 ct. corn to do it with. Before you feed 40 ct. corn to cattle you had better "look a little out." If you have the corn, and a natural liking to take care of stock, and good advantages for fattening the steers, then go ahead, and if you do not lose too much the first year, try it again. Do not feed many on your first trial. We have noticed the growing demand for young beef in our market. We see yearlings quoted in the *Drover's Journal* weighing from 1,000 to 1,400 lbs. and selling for the highest price. We have fed two, three, and four-year-old steers, and have found that a four-year-old will feed better, get larger and fatter, and will out-sell younger cattle, but they cost too much. A two-year-old will grow and develop but not fatten satisfactorily, while

a three-year-old is already developed, takes on fat readily, and make handy cattle to feed and sell, and upon the whole we find them the most profitable age for the average farmer to fatten.

When to market your cattle wants to be fixed before you commence feeding, and then feed according to your ability for handling cattle. Supply and demand fixes the price. This we see proven every sale day in the stock yard, and the board of trade has nothing to say about what it shall be. If the demand be light, and the supply large, the price always goes down; if receipts light it goes up. Knowing this, and knowing also that there is a great flood of range cattle, together with our surplus stock, forced upon the market in the fall months, and at this time of the year we can see train loads of the range cattle, every day, going to market, and they can be produced so cheaply that it would be folly to compete with them. Our alternative is to get our cattle on the market, in the time of year earlier than they can market theirs or later than they can hold them.

Having become dissatisfied with fall and winter feeding, we have been watching spring and summer feeding with a considerable interest. With the result that we have had from our own feeding, we are well satisfied that spring and early summer is the time to feed for profit.

In June and July the prices for beef cattle are generally the best of the whole year, and that would give us two months of the best pasture of the season, so let us work to those two extra good points and sell our steers for six or eight dollars more per head than they will be worth the next fall. But to get steers ready for the June market, they will have to be grained, and it is not profitable to put steers on grass that has been grained heavy. There is that high priced beef and that two months of nutritious grass, and we want to take them both in, as my neighbor did three and four years ago and sold his steers for $4.25 a hundred. I fed last spring partly on his plan and was well pleased with it.

FEEDING FOR A PROFIT.

Commence feeding corn about February or 1st of March, at the rate of eight pounds a day of whole corn to each steer, with shorts enough to follow as an auxilary. With plenty of good mixed hay they ought to gain one pound a day until turned on grass. When you turn out on grass keep up their dry food rations, feed the corn and all of the dry hay they will eat.

If you have good timothy mixed a little with clover, feed it to your steers for a month or so, it is worth more than corn pound for pound. It is not the value in the hay alone, but it keeps the steers from sickening on the green grass.

If hogs cannot follow the steers on account of fences, it is a saving to feed cob meal, feed it at night and let them lie down. Do not let them on grass before it is of good size, better keep them in the yard too long, than to let them on grass to soon.

Last spring, on March 1st, we separated forty steers from the rest and commenced feeding ear corn at the rate of seven pounds to each steer a day, with shorts to follow, also plenty of good hay. They averaged 936 pounds. We weighed them again May 3d, sixty-four days feeding, a gain of sixty-nine pounds, a little over one pound a day per steer. The grass was backward and small for that time of the year, but the yard was muddy, and I took pity on the poor steers and let them run in the pasture through the day, and fed the corn and hay as before for fourteen days and weighed again, and they had shrunk a little over four pounds per steer, and if they had been left in the yard I think they would have continued to gain the one pound a day; this makes it a loss of eighteen pounds in fourteen days against the short grass.

I feel amply justified in expressing my entire satisfaction at the condition of the cattle trade of Wisconsin. A careful review of the market for the last four years indicates improvement. A general survey of the cattle product to-day denotes a remarkable improvement in the quality, and promises well for the future. I look forward with con-

fidence to the near future, feeling confident that with intelligent breeding and judicious feeding the high quality of our work will bring the cattle interest to be the leading industry of Wisconsin.

DISCUSSION.

The President — Are there any questions?

Mr. Arnold — Part of this paper being omitted, I failed to get at the point I desire. That is, what kind of feed would be the most profitable?

Mr. Russell — Well, grass will make beef cheaper than anything else, as long as it is good. If beef would continue up in price, I could make good profit by putting it on with corn cut green; but at this time of the year the price of beef goes off as fast as you can put the flesh on.

Mr. Arnold — From your experience in feeding, do you find that you get a profit by feeding corn with grass?

Mr. Russell — Yes.

Mr. Arnold — Your experiment shows when the grass is short, you lose?

Mr. Russell — Yes. I would urge the necessity of good pasture. Out of the grass we get our profit almost altogether.

Mr. Arnold — Do you get any profit by feeding young green grass to steers. Does not your profit come by handling well matured grass?

Mr. Russell — I think not. I once turned my steers out the 25th of April, and the grass was good for that time of year. It was a splendid pasture. They put on flesh remarkably fast, over four pounds a day. I was feeding a little hay, no grain, and that kept them from sickening. If I had fed them on grain and grass they would have sickened, and perhaps not gained as fast.

Mr. Arnold — Do you make any money feeding scrub steers any kind of grain?

Mr. Russell — Nothing but with grass; you cannot make anything graining scrub steers.

A member — Did I understand you to say your steers put on 54 pounds in one week on green corn?

Mr. Russell — That is what my scales said. I was in the habit of weighing every Saturday morning before feeding and watering. The previous week, fed with matured native corn glazed, they shrank four pounds apiece. This week, with green ensilage corn cut one inch long and fed right from the field, they weighed 54 pounds more, and the next succeeding week they gained 33 pounds, making 87 pounds in two weeks. My experience has been, the greener the corn the more weight it will produce. If the corn matures it is spoiled for profitable feeding.

A member — What do you consider a fair gain for fattening steers?

Mr. Russell — I consider two and one-half pounds to three pounds a day, a fair gain for the average farmer.

Mr. Arnold — Do you think there is anything gained where there is a large lot of stock and where there are stables and sheds to have them tied up?

Mr. Russell — I prefer feeding in open sheds. I never have had any experience in feeding in stanchions, or tied up.

Mr. Arnold — Do you not think it still better for them to have voluntary exercise; that there is apt to be less shrinkage?

Mr. Russell — They ship better, but I cannot say that they shrink less.

Mr. Arnold — Do not you believe an animal will shrink if he is fattened without exercise? Very often this occurs by reason of relaxation of the muscles, the animal gains in fat but loses in muscle.

Mr. Russell — The scales indicate it.

A member — Would you recommend buying scrub steers to fatten?

Mr. Russell — I knowingly never buy one. Sometimes one will get an animal with others that will not feed well. The question is then, how to get rid of him to good advantage. My advice is to sell him the first opportunity, and not waste corn on him.

Mr. Scoville — Can you make a pound of heifer as cheap as a pound of steer?

Mr. Russell — I believe I can cheaper. When you turn out a lot of steers and heifers in a pasture, the heifers get the fattest.

The President — If there are no more questions, the convention will stand adjourned until two o'clock, when we will meet in the assembly chamber.

AFTERNOON SESSION—2 O'CLOCK.

Meeting called to order by the president.

The President — The first paper of the afternoon is on the subject of

THE AMERICAN ROADSTER — THE BEST ARE PRODUCED BY COMMON FARMERS.

By MR. M. T. GRATTAN, of Preston, Minn.

Mr. Grattan — Before I begin I would like to ask your consideration of the condition under which I undertake to read this to you. I am really a sick man; and if I fail to make you hear as I generally do make you hear when I am on the judge's stand, you will understand the cause. (Applause.)

AMERICAN ROADSTERS.

To attain the highest eminence as a steady constant performer either man or horse must have an inheritance of labor in the open air, bear in mind I use the term labor, not exercise, for labor involves self-discipline and application to tasks that are distasteful. This discipline of labor with healthy surroundings through several generations builds up that toughness of fibre that no artificial processes substituted by man can equal. The gymnasium and the covered-track-colt kindergarten will never yield an inheritance

of vigor to the genus homo or the genus equus equal to the farm, because the works of man cannot equal the works of God. No city-bred man was ever elected president of the United States. The greatest campaigners of every decade but one upon the trotting tracks of our country have come from the farm with generations of farm labor back of them. The two grand figures of our civil war, the men who attained supreme eminence, the one in civil, the other in military life, labored hard upon the farm, as did their parents, their grandparents, and their great-grandparents. The two salient figures of our great struggle were Lincoln the rail splitter and Grant the teamster. Will you tell me that this was chance? Then go back to the other great struggle which this people made for existence and human rights. The greatest soldier was Washington, from his Virginia farm, with a long line of farmer ancestors. The greatest statesmen, Jefferson, the greatest orator, Henry, both farmers, descended from a long line of farmer people. Where did the great figures of to-day come from—the great kings of finance, politics, commerce; are they city-bred men? No; they came from the farms, as will their successors. You cannot breed the greatest men nor the greatest horses artificially.

The best campaigner to his day and the first one whose name would be generally familiar was Dutchman, bred by David Denny, a Dutch farmer, of Salem, N. J. He was worked hard, as was his dam, his grandam, and further along the line without a break so far as known. Even in those days, 1828, wealthy gentlemen were breeding fast horses as a pastime, but none of them could surpass the production of the obscure Dutch farmer. He won eighteen races at all distances up to three miles at all ways of going, beating the best of his day, getting a record of 2:32 in harness, 2:30 5-6 under saddle, 7:32½ three miles, which was unbeaten for over thirty years, and never has been beaten but once at any way of going. His four-mile record (10:51) also stood over thirty years and has never been beaten but once. His successor was foaled five years after; the gray mare Lady Suffolk was bred on a Long Island farm, and like

Dutchman there are many versions of her pedigree, but like him not the least element in its excellence was generations of pure air and hard work. Sold when a youngster for $60 she changed hands next for $112.50, and trotted her first race for a shake purse of $11. She was the first trotter to beat 2:27, but could never beat Dutchman's long-distance records, but for that matter many a faster trotter, including the great Dexter, failed in attempting to eclipse the Dutch farm horse. Like Dutchman she won many more races than she lost, and was the greatest campaigner of her day. Twelve years after the birth of Lady Suffolk, when the breeding of trotters had become a fashionable industry with many wealthy gentlemen, a plain farmer of Dutchess Co., N. Y., bred her successor in Flora Temple. The pedigree experts have warred for years as to what horse sired her, but none of the ones claimed had been elevated to fashionable pedestals by wealthy professional breeders. They were farm stallions, while the dam did the ordinary work of a farm. While her predecessors in reigning over American trotters were low-built animals, standing on short legs and making their height by depth through the heart, Flora was a phenomenon is this respect, standing but 14.2, a long, low mare, deep through the heart, on very short legs. Suffolk was 15.1 and Dutchman 15.3, but a big horse for his height and an uncommonly stout one, as he proved in Jeffer's brick-yard until five years of age. This illustrates a point in the evolution of labor.

Sturdy substance prevails over the weeds set upon stilts, the too common product of professional breeders, where mares and stallions without habitual labor to knit and bind them together stretch up in heighth, lacking substance and stamina. The running horses of early pioneer days were, as well as the trotters, inured to hardships and labor; in thousands of instances were they habituated to harness and the plow. Then great four-mile runners were bred, to-day one mile and a half has got to be too long for a Derby. Both men and horses must get into intimate relations with the soil to build up great energies; it is our natural mother, and nature is a jealous mother, permitting

no grand results to follow her deposition. For years Flora Temple ruled the trotting arena, beating 2:20 for the first time, and it was not until thirteen years after her birth that her successor was foaled. An Orange county farmer, who does not figure among the professional breeders, used the little black mare that was the dam of Dexter indiscriminately for road and farm work. Her sire is known, but her dam was simply a unit in the great army of small, iron-sided, wiry animals of common blood habitually used on American farms thirty years ago. She lived to be very old, and was good in all places. A plain farmer, William Rysdyk, gave $125 for a mare and colt. The mare knew what work meant, as did her forebears. Jonathan Hawkins bred his little black mare of humble origin to his neighbor's colt, and all the art of all the rich professional breeders with the blood from which he sprung to juggle with has ever produced his superior or equal as a campaigner. To do this was left to other farmers. Like his predecessors Dexter stood very low, 15.1, with immense substance and power. What Woodruff called "a big-little one," and further described as "long for his inches, deep through the heart."

John B. Decker, a plain New Jersey farmer, bred Dexter's successor from a mare without any known pedigree, for no one knows who bred her. Mr. Decker used the dam of Goldsmith Maid at severe farm work, besides which she had many drivers and hard ones in her livery stable experience, as the good ones that can stand the racket usually do. As no one knows the breeder of this mare it is idle to speculate concerning her pedigree, but it is quite safe to say that she had not fallen into the lot of a livery stable and farm drudge from aristocratic surroundings with all trace of her origin lost. The wealthy breeders of pampered steeds keep track of them from pride. Beyond a doubt the dam of Goldsmith Maid originated among her equals. Every effort has been made to trace the greatest campaigner the trotting world has yet known beyond her plebian dam to a gilt-edged ancestry without avail. Like her predecessors that stood out in plain pre-eminence over all

their contemporaries she sprung from a heritage of labor. At every moment since trotting began a horse so bred had eclipsed the efforts of the professional breeders and now we shall see whether the Maid in yielding up the crown is forced to surrender to a princeling or a plebian. Her suc cessor was foaled in 1867 when wealthy gentlemen had dotted the whole land with establishments for breeding great trotters. Was the fast, level-headed, game trotter that could force the great Maid into retirement bred at some of these elaborate and costly homes, where brood mares luxuriate in idleness and lose their constitutional vigor? Was his sire some great progenitor of speed whose rich blood lines elaborately proclaimed themselves in Wallace's Register? Was his dam one of the noble band of matrons whom Wallace heralds as great brood mares? Fifty years had now elapsed since a mile had first been compassed in three minutes and no trotter born to the purple had ever yet worn the crown. Was it not time that the annointed should come into possession? But good Dame Nature has a firm grip upon her own and she places the crown upon many a lowly head despite the schemes of men to crown their own creatious. An obscure bay stallion pulled a butcher's cart in New York city. From this plebian service he drifted to the farm of a laborious Long Islander, whose hands and whose horses gave firm token of dollars honestly earned. Mated with the best work mare on the farm, descended from the hardy Morgan workers on stony New England soil this obscure working stallion begat the greatest trotter of his day and generation. Again a plebian wore the crown. Rarus, the master of all the trotters for many a day lacks advertisement in Wallace's heraldry as a standard trotter, but like Oliver Cromwell of whose name Burk's peerage is silent, he was none the less king of all his fellows. Retired and not reposed Rarus gave way to a horse from a milk-wagon whose dam transmitted to him the tough inheritance of habitual labor.

St. Julien wore the crown until the eighteenth day of September, 1880. For sixty-two years the plebian had been

king. An inheritance of labor on one or both sides had been a blot upon the escutcheon of every acknowledged king or queen of the trotting arena. Upon that day the aristocratic equines conquered the throne, through a descendant of the plebian it is true, but two generations intervened between queenly honors and the curse of labor. In this country aristocracy quickly paints out laborious devices, substituting the heraldry of chivalry and romance, so we will not claim Joseph Battell's discovery that Pilot, grandsire of her dam, was the offspring of laborious New England farm life, a grandson, too, of that lion-hearted worker, Justin Morgan. Mr. Battell says he has the proof and will soon give it to the world in book form, but let that go. Neither let us claim the benefit of Elder Wallace's contention, born of his hatred of the running horse, that her dam, Miss Russell, was of plebian farm-horse origin. It may be true, a plebian in disguise may in fact be reigning at this hour, but let us not claim it, let us give the aristocratic equines one point in nine and not question the rightfulness of the claim too closely. They may never have another, and to dwell too long upon her toe weights, her lack of roadster qualities, her failure to demonstrate campaigning capacity beyond her compeers would be unkind. For a little more than ten years she has been the queen by virtue of mile dashes, not supplemented by great campaigns like her predecessors, and the artificial methods have won a ruler. True, her merit would be greater if the distance were reduced a little as is being done for her artificially-bred compeers, among the runners; but let us call her queen and not cavil because she did not quite win her crown like the hardy kings and queens that reigned before her. For ten years in seventy-two a professionally-bred trotter has worn the crown, but for sixty-two years the vigor, the vitality, the tough fibre, the stout heart and great lungs born of habitual labor in the sunshine and pure air of the farm have reigned supreme, and they will come to their own again. It is nature's law which cannot for long be overturned. The signs that king labor will soon claim his own are strong, clear and significant.

From an obscure farm in Missouri came a plow horse of undisputed working lineage upon the dam's side and of very much disputed paternity, which fought his way last year nearly, if not quite, to the front of living campaigners. Wm. B. Fasig, one of the most experienced and acute observers, said after betting his money against McDoel, because of his lack of breeding, and losing it, that not more than two trotters in America can beat him in a race. McDoel had just beaten the aristocratic Allerton, born in the purple, a fourth heat and race in 2:15½. The man who has piloted two campaigners ranking the greatest of their day drove McDoel, and will drive him in 1891. The result is dreaded by the millionaire devotees of aristocratic blood and idleness. Possibly Mr. Fasig can say one year from to-day, instead of questioning the ability of more than two trotters in America to beat McDoel, that beyond a peradventure not one can do it. One of McDoel's rivals for campaigning honors is Jack, whose dam a little, insignificant, Morgan farm mare from a working dam sold for $60, carrying her great son. What great stock farm can point to such campaigning geldings as McDoel, 2:15½, and Jack, 2:12¼. Another 1890 campaigner, Keno F, 2:17, does not comfort the people who seek to institute a standard trust in trotting blood. Of lowly descent upon both sides he proves almost invincible and sheds lustre upon the farm workers that thickly sprinkle his pedigree upon both sides. Another great campaigner of 1890, Leopard Rose, 2:15¼, is a plebian, whose capacity to beat the aristocrats bears the fresh fragrance of newly-turned soil, glorifying labor and the plow. Do you say that all these examples from Dutchman down of the results of labor are exceptions? Rather numerous for that; how would it do to call the other side the exceptions, for as a matter of fact most of the money that has to be fought for goes to the sturdy sort inheriting the capacity to do battle week after week from ancestry that gained by daily labor in the fields, the soundness of wind and limb that is lost in the life of idleness, led by the brood mares upon the great breeding farms where the plutocrate seek to institute an equine aristocracy allied to their

own. The effort will be in vain, it is based upon a perversion of nature. For a few generations the vigorous inheritance from labor will hold its own with the weeds in their standard trust garden and then choked by idleness, vigorous stamina will die out, yielding to the weeds with their standard-stake, tin-cup substitutes, for genuine sport. Every year will see the weeds, gilded with standard Wallacean heraldry, succumbing in actual battle for the money to stout sons and daughters of sturdy plow mares.

How infinitely preferable, after their track triumphs are over, are the farmer-bred trotters, as roadsters, to those from the big stock-farms or the ranches. With common sense and level heads, born of hundreds of days of intelligent service, they meet the exigencies of road work with calm courage, they know how to back which many of the ranch and stock-farm horses never can be learned, their nerves are not over sensitive from fancies born of idleness, for with equines as with men, satan runs an employment bureau for the idle in order to make them vicious. They have greater hardiness and soundness, stand the road longer, are infinitely superior as weight pullers, to their aristocratic rivals from the big breeding establishments. The question with experienced buyers of road horses is getting to be, not how fast a horse can sprint a mile with feather weight, but how fast can he pull a buggy and how far can he go? Here the farm-bred trotter excels, just as in actual campaigning for the money, he has a strong constitution, a "sound mind in a sound body." He is not afflicted with the meagrims, the vapors, the historical inheritances of idleness and unhealthy, unnatural morbid conditions of the system induced by the methods in vogue upon the great stock-farms. The farmer with his trotting-bred mare, or pair of them, of good size, can keep them profitably employed to their advantage as well as to the advantage of their foals. None of the ordinary work of the farm is injurious to the dam of a great trotter, but the very work she does adds to his inheritance of qualities that enables him to kill his weaker rival of the standard-stake, tin-cup school. Shrewd buyers of campaigners and road horses

LOU BURK
1890

are learning this very fast, that the farmer-bred trotter is cheaper and better than his rival. Then let the farmer take heart and not be discouraged at the competition of his plutocratic rivals. Get good blood, carried by good individuals, do not be misled by the standard jargon, and do not think that work hurts a horse. As a matter of fact the American trotter sprang from the American farm and derives from farm labor and farm associations the great qualities that have made him famous. He is the best farm horse on earth, just as he is the greatest roadster, and it is to the farm and not to the artificial establishments of the plutocrats that we must look for the preservation and continuation of his good qualities. Transplanted from the farm to the millionaire breeder's kindergarten and a few generations marks a loss of stamina, increase in height, decrease in bone, increased nervousness and decreased intelligence.

Thus far I have dealt with the trotters without reference to the pacing gait, so rapidly increasing in popularity among buyers of roadsters. Since pacing races have been in vogue only two animals have been freely acknowledged as superior to all of their contemporaries. We have had many fast pacers, but save with these two there has always been sharp rivalry and superiority questionable. With these two in their prime there was no question, so apparent and so great was their superiority to all others that their racing value was ruined. If the great monied breeders have failed in producing trotting monarchs possibly at the allied gait they have won laurels; let us see. Pocahontas, the great pacer, that some people believe was faster than any harness animal ever hitched before or since, was foaled in 1847, bred by a small farmer, John Dine, living a few miles west of Middleton, Ohio. Her dam was a work mare, and she was sold at two years of age to William Dine for $30, who sold her to William Gautchie for $51, who used her for general farm work and sold her to Abraham Pearce to work in a four-horse team. It was not until May 30, 1853, that she passed into the hands of the elder Woodmansee to become the greatest pacer of her day. Shall we condemn labor when it produces such results? How illogical to say

she would have been faster without the labor performed by herself and her progenitors. If that were true why did not some professional breeder whose mares and stallions never pulled more than feather weight produce her superior or her equal?

The only other pacer whose supremacy was plain and undisputed for a term of years belongs to Wisconsin, and as her literary horsemen have for years been throwing light upon his obscure and much disputed pedigree I will not endeavor to instruct you concerning it further than to say that I have never seen any catalogue issued by his breeder with the wonderful legend 2:06¼ blazoned in red letters across its face. Until some professional breeder can equal or excel that the artificial methods cannot be said to excel the processes of nature. Johnston was not evolved by the scientific combination of blood lines and speed strains. No great breeder with palatial surroundings and scores of high-bred equines, living a life of ease, dictated the coupling of his sire and dam. Like his great compatriot, Rarus, Johnston is a plebian. Regardless of men's theories, despite the rules and regulations laid down by the standard trust for speed production, nature from unexpected sources gives us the nonpareil of harness horses. After being barred for many years from competition with the much-vaunted trotting-bred pacers of standard origin it is thought the king may be deposed as old age creeps upon him. Perhaps he may, but it is not unlikely that another plebian will succeed him.

My conclnsion, then, is that the most useful, the most profitable, and the most salable horse for the ordinary farmer is the American trotter. Furthermore, my conclusion is that the common farmer can far excel the professional breeder in producing supreme excellence or general desirability. The great draft-horse has his place where he is unexcelled, but it is not in the general work of an ordinary American farm. A pair of 1,200 lb. trotting-bred mares of the right sort make the ideal farm team for general use. Such a pair, for instance, as I have seen among the descendants of the Wisconsin horse, Black Flying Cloud. The

labor they perform will add to the value of their progeny, for the education of the horse begins before he is born. Their sisters upon the great trotting-horse breeding establishments will carry their foals through a term of luxurious ease. Every day is weaning them and their unborn offspring from the companionship and control of man. Every day their natures trend toward the result which we experience in the mustang and broncho. The foals of the trotting-bred farm team get especial attention. The handling of an entire family often learns them the lessons so valuable to a road-horse in after life. They get to looking upon the human race as somehow allied to their own and not at all to be feared. All wildness and shyness disappears, the colt grows up familiar with mankind, becoming the safe, steady, reliable driver. At the big trotting ranch or farm, at stated periods for a brief time, a system of education is pursued having for its main object the selection of the fastest. This purely mercenary process, pursued by mercenary hirelings, is often conducted in such a manner as not to beget much love for humanity on the part of the youngsters whose natures had already begun to lapse into barbarism. Love begets love, and confidence begets confidence. The farmer's son instinctively loves and pets the two or three equine babies that come to the farm from year to year. So does the farmer's daughter and his wife, while the farmer himself has often a kindly word and caress for them. If there were a lot of colts this special attention would be too much divided and its humanizing and educational effect lost.

I have read that great cities are sores upon the body politic; that great wheat farms are a curse to the country, and that the hopes of the nation hinge upon its small farms. In like manner I have come to believe that our mammoth horse-breeding establishments are a curse to the equine race, and that upon them are being lost the valuable qualities which it has taken the small farmers more than one hundred years to develop. It is stated that a group of these millionaire breeders were discussing recently the proper method of producing an ideal race horse. The various

fashionable blood combinations were presented until a member of the party expressed his conviction that the best method of getting an ideal race horse was to buy him. It may be that this man had been betting against McDoel because the horse had pulled a plow and lacked fashionable pedigree.

In a small way I have been aping the plutocrats and maintaining brood mares in idleness, but the fastest pair of trotters I have bred and the only succesful campaigners are from a couple of little mares that did farm work, as did their dams before them. I put them together for a road team with which to earn my living in business driving, and they carried their first foals through a hard season's work.

A neighbor on a small farm brought me last spring the produce of one of his work mares, whose dam was also a work mare, to see how it compared with my own. There was little room for comparison. The colt was too fast. With opportunity he will make a race horse and a campaigner.

Does not this suggest a lesson to the wealthy gentlemen who love the trotter? Why not be philanthropists and do the world some good? Disband your great harems of idle brood mares, keeping only those which can be profitably employed, and give to your neighbors at a nominal fee the services of the best trotting stallions. Buy the most promising colts and develop them, thereby promoting the general prosperity of your farmer neighbors. By attempting to breed upon a grand scale you centralize an industry which should be widely diffused, taking from the common farmer what should be one of his best sources of revenue. Another evil of centralization in the breeding of trotters is the bad effect upon equine morals of association with the riff-raff of humanity which necessity often compels the large breeders to employ. As a boy I served in Uncle Sam's navy during the rebellion, and sailors are not noted for refinement, especially in time of war, but for absolute and unqualified depravity, for vulgarity, profanity, foulness, and indecency that makes a man ashamed of his kind

some of the men to whom wealthy gentlemen entrust their horses excel the world.

DISCUSSION.

The President — This paper is now open for discussion.

Mr. Grattan — I am not prepared to defend it, my strength is too much exhausted.

The President — I would like to hear from anybody on this subject.

Mr. Curtis suggests that the paper does not need any defense.

Mr. Matt. Anderson — It is well known that I have advised farmers heretofore not to believe everything that these trotting horse men say. I want to say that I do not think all farmers will believe that a trotting bred horse is one of the best for farming purposes. I have known men for the last forty years who have attempted to raise fast horses, and to cultivate their farms with them. I knew it in Pennsylvania and Ohio. It has been a disappointment and failure in every instance where I have observed it. The blooded horse of running and trotting breeds is of a nervous, excitable disposition, and will not make a kind and gentle farm animal. And another thing, if the farmer could breed those fast horses, there is not one man in a thousand capable of training them, or who has a race course or track to train them on. Let a farmer undertake to breed fast horses and train them, take them to the fair, enter them for trotters, and he will be very apt to lose his money. I never knew a farmer to make any money by trotting fast horses. I have never known a farmer in all my experience to lose money by breeding first-class draft horses. In my younger days I used to buy horses and ship them from Ohio to New York and Philadelphia and other places, and I thought at that time I knew something about a horse; but I am satisfied that for farmers there is no horse so profitable to breed as a good draft horse, Percheron or Clydesdale. I hope there will be no farmer go home from here and undertake to raise fast horses, train them and expect to make money. One

farmer in Dane county tells me he is making money breeding standard bred horses, but it is for sale when colts; but if he undertook to train them himself, or pay for their training, and undertake to trot them for money, I don't think he could make as much money as by selling them. There are very few of our men who follow the business of handling trotting horses, making money. I like to see a fast horse, every man does, and I like to own them. When I was young I had the fastest horse in my section of the country, and felt proud of it, but I never trotted for money. I think farmers ought to breed good carriage horses; they ought to be at least sixteen hands high, fine, lofty steppers, nice carriage and good color. That kind of a horse that can step a mile in four minutes would sell well, I think. That is one kind of horses that farmers can engage in breeding at a good profit.

Gen. Bryant — When I was a boy, the farmers I grew up among always bred Morgan horses. I never saw until I got up to manhood, French horses that came across the waters. We always raised Morgans; a horse that did more to put down the rebellion than any other breed of horses. What kind of cavalry horse would these French horses have made? The gentleman talks about trotting horses being nervous and frisky. Come to my farm. I have twenty, any one of which will come and eat out of your pocket. It is all nonsense to say they are nervous and frisky. They came from the breed of horses that God made, the Arabian horse.

Mr. Babbit — I think because of the fact that this gentleman who read the paper cannot give the breeding or pedigree of any of these successful horses, these horses that made the records, it is as fair for me to assume they are well-bred, as it is for him to assume they are not well bred. My experience as a farmer convinces me that if you want to raise a good crop you have got to have good seed; and it is going back to the days of barbarism to talk that kind of nonsense before an intelligent audience like this. That is my idea about this breeding business, in every single instance where these plebians have come to the front, I say

it is fairer for me to assume they have sprung from the right kind of origin, and from good, first class horses, and very much more fair for me to assume that, than it is for him to assume they are not from that kind of stock. I leave it for you, gentlemen, to decide if his basis of argument is not wrong on the start; and if any one sees fit to question my ideas, I will call upon our old friend Clark. He will be prepared to back up his side and mine.

I would like to go for Senator Anderson a minute. It seems to me that we as farmers are all too apt to work into one line. It seems to me that to-day there is a dearth of good road horses in the state of Wisconsin; that we for a term of years have been drifting too much to the heavy draft horse. I admire them very much in their proper place; but when the gentleman says there are the profitable horse for the farm, or his farm, I beg leave to differ from him. It is merely his opinion, and mine. I believe that there is more money to be made in Wisconsin in the next five years breeding from a good, solid, clean-cut strain of roadsters than from the draft horse. When he talks about our road horse being vicious, etc. — where do you get kinder horses on earth than the Morgan or Hambletonian? I believe both for our own comfort and for farm use there is nothing better than a good lively, clean-cut 1,200 roadster.

Mr. Arnold — I did not hear the whole paper, but there are some things I am well pleased with, and I think the whole audience is. He says that sufficient vitality to enable the horse to perform good service may be best obtained on the farm. Another point he makes is that the animal should be handled right, and likewise his dam, and that the education commences even before the colt is born. Now all thoughtful breeders appreciate this fact. It makes no difference whether it is a standard-bred horse or any other. Another point he has made, that the farmer should raise this class of horses; if he does, they will not necessarily be trotters; they may be roadsters; and in my opinion it is more profitable for a farmer to breed roadsters and train them, than any other class of horses. They are the

most marketable horses, and there is a wide and constantly increasing demand for them. The demand for the heavy draft horse is limited. This has been the talk of farmers all over the state, who breed heavy draft horses. I do not know why farmers should not have the pleasure of walking behind the plow drawn by a fine stylish team; and I believe a man thinks more of himself behind a good looking team, than he does behind a shabby one, and our wives and children think more of themselves if they ride behind horses, such as the best and highest class of our people can afford to drive. If people in Milwaukee can ride after a five hundred dollar team, why not you and I enjoy it as much, and we can raise them; but we never can if we undertake to breed only draft horses.

Mr. McKerrow — I have taken very much pleasure in listening to Mr. Grattan's paper, and I agree with all the gentlemen that have been on the floor (although I like a fight once in a while). Mr. Grattan did not disparage good blood lines at all; he simply established the fact that there was something else necessary in the development of a good horse beside blood lines — that was exercise through his ancestry that would bring to him the best development of bone, muscle and nerve-power. And we must all agree with him there. Then again, I do not understand that Mr. Grattan has advised all the tarmers of the state of Wisconsin to go to breeding road horses. If I did, I would be just as ready to combat his ideas as Senator Anderson. There are farmers in the state of Wisconsin that are fitted to breed road horses; it requires a particular kind of horse intelligence to make it a success. There are other farmers — and ship loads of them — not fitted to breed road horses, and if they have high grade draft horses they had better stick to them and improve them. Breed the flat feet, puffy joints, big heads off from them, and get a better class of draft horses, and there will be a market for them. The great trouble in the draft horse market to-day is you have a lot of lunk heads. Our importers went over to Europe, anxious for draft horses, bought everything that was offered, and those foreigners unloaded all this stuff on

Americans, and we find the progeny of such sires scattered all over of our country, until in most cases they are not worth much more than beef, cheap as it is. But first class draft horses will sell to-day and always sell, and first-class roadsters will sell to-day and always sell; and Mr. Grattan has pointed out how we can develop first-class horses — not by leaving our breeding stock in idleness, but keeping them at work, and developing the best qualities in them, and I agree with him.

Mr. Goodrich — We are drawing wood about five miles with teams composed of three span of ordinary sized draft horses. They can get there and back with their load of wood in time for dinner and supper every day and without any trouble. I have never in my life seen three better teams than they are. One of these teams, a pair of black horses, are fifteen years old next spring. I have owned one of them about ten years, the other about eight, and I have yet to see a team that can drive finer double, or pass me in a common buggy on a good road. I throw out the challenge to any fast horse man in Rock county.

The President — Mr. McKinney has gone home.

Mr. Goodrich — I am in favor of the common sized American farmers' horse that is good for all purposes, and three of them put abreast on a plow or wagon, no large team can excel them. And when your wife wants to go to town in the afternoon she can take the third horse, and you can work the corn while she is gone.

Gen. Bryant — I want to say for your information that the McKinley bill stopped the importation of lunk heads from across the water.

The President — Politics are barred.

The Secretary — I consider it a most fortunate thing that the farmers of the state of Wisconsin do not all agree upon the horse question. If we all believed to the fullest extent in the roadster horse, and all wanted to raise him, I apprehend there would soon be a superabundance of that class. The field is open for us all. Let each man raise the horse that he is adapted to raise, that he finds pays the best. I do not know when I have been pleased to such an extent

as I have been this afternoon in listening to the admirable paper of Mr. Grattan; and I want to say to my friends here, when you have time, deliberately to read that paper in the transactions published, you will find additional charms in it. I have a great admiration for a road horse, but recognize the fact that I cannot come in competition with my friend Grattan in the production of that kind of stock. There may be those here that can approximate it; if so, I want to say to you, raise roadsters. But there are a great many like myself that if they succeed will best raise the heavy horse. That being the case, I want to say to you we must try to make this heavy horse the very best possible of its kind. The time is past when the market is going to buy a draft horse for weight alone, it is paying a premium no longer for puffed hocks, flat feet, or heads out of proportion to their bodies. But when you can raise a symmetrical, smooth horse, weighing 1,500 pounds or more, you are as sure of getting a good remunerative price for it as for any horse you can put upon the market.

Mr. Rogers — As a practical farmer I desire to say a word in behalf of the lunk-head. I believe that I am the only farmer among those that have spoken thus far, who has had actual experience in raising trotters and draft horses. I am in the double business. Unfortunately I so started and have not got out of yet. My experience has been this: I raise a draft horse that I can sell when two years old for $100 to $175, and that readily, right to my neighbors. I see that these trotting horses that I am raising I never find in condition for market — not one of them. Every time I visit my farm I find the most of those trotting horses in the barn standing on three legs, they have got caught in the wire fence or something else. And since I have seen so much of that I have become convinced that farmers whose pastures are fenced with wire fences don't want to go into the business of raising trotting horses. They want to keep with the good old Norman horse; it never gets caught in the wire fence. At the same time that Norman horse — I speak from the record — will raise colts and horses that will draw the plow, and give the driver or

holder of it as much pleasure as any team I have ever seen to a plow. I have stood behind the plow with the smaller horses, three of them on the plow, when I felt a deep sympathy all the time, and pushed on the handle of the plow to help them along. I saw on my farm last spring a pair of Norman horses, three years old only, hitched to a plow, and there was not a man to be had on the farm that would follow that team from morning to night, and they were just as fresh at night as in the morning. They not only drew the plow, but the man also, and that is the kind of team I like on the farm. I am in favor of the draft horses.

A member — That team was a lunk-head with the lunk-head left off.

Mr. Curtis — That is one of the animals that Mr. Grattan talked about. These lunk-heads have not ambition enough to get into a wire fence; it is only the good ones that get into trouble. I understood you to say your man could not follow them, but you said the team drew the man and the plow.

Mr. Rogers — I said the team drew the man and the plow.

Mr. Curtis — I have had something to do with horses, trying to raise trotters. I have visited all the large breeders all over the United States to get them to go to the exposition at New Orleans. So far as my experience went I found the people breeding large horses all seemed to have plenty of money, seemed willing to go to the exposition. Whenever a man had a large lot of trotters he could not raise the money to pay his expenses. Not a man among those who were breeding big horses ever made a remark he could not afford to go on account of expense, and not a man breeding trotters that said he could afford to go, and from what I learned I have come to the conclusion a man breeding a good large horse that he could sell when two year old for $125 or $150, was the man making money. At the same time, I agree with Mr. Grattan that people can raise good roadsters and make money; but I believe the trouble is with farmers in raising good roadsters, they do not take good care enough of their colts. They run to the

straw stack the first two or three years; they do not get their growth until four or five years of age; the large horse, fed well, gets his at two or three. I believe that the horse for the farmer to raise is the draft horse. We can sell them when young and get the money quicker. Suppose you get a good roadster, if he goes a mile in three minutes they won't want to give you more than $150. I don't see much encouragement in raising roadsters.

Mr. Rogers—I want to say the colt I sell for $150 I have to throw in a Curtis collar pad too with it. One thing further, I think when I come to recall all the circumstances, it was watching my friend and neighbor, Mr. Curtis, raising trotting horses that most discouraged me in the business.

Mr. Grattan—I think it is a mistake to disparage any breed of horses in an audience of this character. I think it is a mistake to term a draft horse a "lunk-head," or speak disparagingly of the trotter. I think there should be perfect good feeling and courtesy in the discussion of this matter. If I were an admirer of the draft horse I should own and breed them, and I think they have their place, and that they should be kept in their place. I do not believe that the draft horse should supersede the road horse, or the road horse supersede the draft horse; they have their distinct province, and in their province are unexcelled. This statement that no ordinary farmer can breed the trotter, however, is best met by a specific statement, one in which names, dates, time and place are all given to you. I breed trotters on a small scale. I have a neigbor by the name of William Stevens. He bred a mare of working ancestry to Herod. The product is a little filly. He went out and started her without shoes, to a road cart, and won handily. He is offered more for that filly than for all his horses on his farm. Now I know that, because I am prepared to give it to him myself. He discovered this little filly could go a little bit, so he went and put her in the two year's stake, and he went out and showed them a clean pair of heels, and won the money in three heats. Now, then, is not Mr. Stevens as a matter of fact making more money in

breeding that filly than he would in breeding a draft horse? And I think a specific statement of a fact like that is more significant than any general statement.

Mr. McClung — There is one point in this discussion I have not heard brought out. The roadster has his place, the draft horse has his place. The farmer wants, what? One gentleman says he wants the small or medium sized horse, that it is the best for the farm. I have used both kinds. I will say when you use a draught horse on the farm, use him to a plow appropriate to his size; increase the size of your tool in proportion to the size of your horse. You will find that a draft horse will do you the most good on a farm. When I put the small horse on a big plow, it worries him to keep up that same fast gait all day; but my big horse will work and go a good fair gait all day, and do much more work without worry and fatigue, and when I sell them I can get a bigger price for the large horse, except the small horse proves to be a fast horse.

Mr. McKerrow — I believe I introduced the term "lunk-head." I mean that we have lots of draft horses that are lunk-heads, without any disrespect to the draft horse. I have raised a few draft horses, I have a few on my farm, a pair of mares, 1,600 each, no lunk-heads about them. And they will tire a man every day through the spring work; they are very elastic steppers, their heads are up and they pull on the bit all day long. I have had a few of these lunk-heads, I know they are that from experience, and I don't want any more of them on the farm or to sell. I wan't to say right here that you can raise a good draft colt, and put him on the market at three years old just as cheap per pound as friend Arnold can raise a good Short-horn steer, and fat him; make your colt weigh 1,500, and your steer the same, and the average farmer can make money at this; but you must have a good one, understand.

Mr. Grattan — I think it quite likely you gentlemen who talk upon the horse topic would agree as well about anything else as you do on that subject. In politics you would be as well agreed as about this. There is only one intimation concerning my article I desire to make an answer to

at all. That is the assumption of some gentleman that the winners of unknown breeding did not in fact have good breeding. It is not my intention to assume anything of the kind. On the contrary, I believe this, that the average American horse, before importation of draft horses, was the best breed of horses; and where we have maintained this breed of horses—the average American farm horse, and original horse—we have as good blood in unknown origin as in known. I won't say the Dutchman, because his breed was unknown, was not well-bred, I believe he was. The farmer is as liable to produce the finest trotter as the greatest breeder on earth. This horse McDoel worked on a Missouri farm. He was taken out and made the greatest campaign of any horse started out last year. It is a mistake to undertake to say a good road horse don't bring but $125 or $150. I would suggest that Mr. Curtis would undertake to buy one for that money. A good roadster, a good shapely, well formed road horse is salable any where at from $400 to $500.

My desire is to put back into the hands of the farmer what was originally there, before the large breeders undertook to get it away from them. We have great breeding establishments for the production of blood horses. Gov. Stanford sold a drove of horses, several hundred the other day. In old days the farmer produced those horses; they were better than Gov. Stanford's. I simply desire to make that point to you so the man who farms may also raise the most profitable product produced on the American farm. I live on my farm and have bred the draft horse, and I have not a thing against them. There is more money in the production of the trotting horse than the draft horse, and I will show it from my own books, and from the books of many another farmer in the United States, from the catalogue of old "Pap" Conklin, he made more money out of road horses than any other gentleman that sits here ever made out of draft horses.

The President—I do not understand you are advising farmers to aim exclusively at the production of extreme speed?

Mr. Grattan — No sir; simply to get a well bred large sized mare, and use that animal every day on their farm, as an advantage to the animal itself. I do not advise any farmer to be a horse jockey; but get good blooded horses and sell them when he gets a chance.

Mr. President — I feared possibly the audience might infer from your paper, that you did not have just the right appreciation of breeding to uniformity as the most desirable thing for the farmer. Uniformity in speed, style and finish seem to me to be of great importance for the farmer.

Mr. Grattan — Since we went over to Europe and brought over these Behemoths, we have mixed them up until we have not a breed of American horses at all.

Mr. Curtis — Mr. Grattan says that if a man wants to buy a good horse he will have to pay $300 or $400. I don't want to have these people think they can come to town with road horses and sell them for that. I had a horse that was brought here three times to sell. A man came here with a good horse and tried to sell it three times. The next time he came down to my barn and wanted to sell his horse. He said his horse could trot a mile in three minutes. Said he wanted $300. I said I would go down on the track with him and I found he could. I bought him for $175. He can trot a mile in 2:40 now. Are farmers going to raise that kind of horses and sell them? If it had been a good road horse he could get that amount of money without trouble. A farmer can't sell a good road horse for the money that Mr. Grattan says he can. No man in the United States has made money breeding trotters and developing them. You can go to Kentucky and they sell them as yearlings. I was there at one time. They were rounding up their yearlings that forenoon to get them ready for the spring sale. I saw one I liked the looks of, and asked what they would take for it. They said they would not sell it. I asked them why. They said they were going to sell those at auction. You may offer us five times as much; we won't sell them, for if the word were to get out we were retailing them we could not wholesale them. I understand Mr. Grattan has a way of selling his without a record; I do not

think he has ever developed a trotter in his life he made any money on. I don't think S. A. Brown ever did. I don't know of any breeder that has gone on developing that has made money.

Mr. McKerrow — I would like to ask what you will take for the $175 horse now?

Mr. Curtis — I will sell him cheap now.

Mr Phillips — The audience will get the idea that a heavy horse is necessarily a lunk-head. He is just as apt to be a horse of good style and action and intelligence as any other horse that lives; you don't *have* to raise lunk-heads.

You won't have any trouble in selling that kind of a horse. You go to La Crosse and Milwaukee, go anywhere and you will find them using that kind of a horse; and let a fire bell ring, and the place I go to as quickly as I can get there, is to see those horses get their place at the tap of the bell, they are champing their bits and out on the street with the intelligence of men. They will run to the fire and turn around and stand there. There is intelligence, and it is worth money. It is not necessary that a big horse should be a lunk-head. There are express horses in our city that will follow the expressmen all over the city, and they bring good prices. That is the experience up in our country, and everywhere they sell heavy horses being one, two and three years old good style and intelligence. A buyer can tell whether he knows anything just as well as a teacher can tell a boy in school; he don't have to take him out and put him in the harness and train him, he will give you his price and take him away if he suits him. That is the horse for the ordinary farmer to raise. A man situated as Mr. Grattan is can raise these trotting horses and spend money on them, but as Mr. True says, there is room for all.

Mr. Clark — I agree with the sentiment of Mr. Grattan's paper. The farmer who has well-bred mares, can in my judgment make the best of his opportunities in breeding to the standard bred American trotter. In selecting a sire he should choose one possessing the qualities which the market demands, namely — size, style and finish, with a bold carriage movement. In addition to these qualities, as much

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speed as possible. There is a ready demand for a horse sixteen hands, of good style and movement, that can speed a three-minute gait. That horse can only be produced by breeding to the standard bred trotter of sixteen hands and upwards, and weighing from twelve hundred and fifty to thirteen hundred pounds and possessing the desired movement, and bred from producing lines, from both sire and dam. This kind of horse is the ideal farm horse. They will do more work on the farm, do it easier and longer and more satisfactorily than any draft cross that I have seen. I speak from experience, as I have tried both. And now days, as many farmers own a family carriage, he has at his hand the team to draw it, and is not of necessity obliged to take the dust of his city acquaintances. As to the profits of breeding this kind of a horse, I will speak from my own experience. In referring to my sales for the last three years, I find I have sold twelve head for fifty-five hundred dollars, none of them more than well broken.

The President—I now have the pleasure of introducing Mr. C. A. Hatch, who will address you on

THE COMING SHEEP.

The coming sheep must be a general purpose sheep. While we fully believe in a special animal for a special purpose at any and all times, the general purpose sheep seems to be a necessity—not *per se*, but facts are stubborn and we must take mankind as we find them, not as we would have them. The general purpose farmer is a fact which cannot be ignored, and he makes up three-quarters, if not more, of our farming community. Where there is a demand there is always a supply. * * * The coming sheep must have the vitality, constitution and general characteristics, covered by the comprehensive term, "Rustler," the ability to stand up and maintain his good qualities even in the most adverse conditions; and where can this animal be found but among the Merinos? Their range of adapt-

ability to climate is greatest, their hardihood adapts them to scant pasture, and their long line of heredity enables them to withstand the evils of promiscuous and indiscriminate breeding.

The question of breeds is not one of separate individual merit of selected specimens from each breed, not as to which has the choicest cut of mutton or the most of it, nor as to which has the finest, most valuable or longest wool. Physicians in use of remedies say of certain symptoms such a remedy is indicated. So in sheep farming a certain set of circumstances indicate certain breeds. The physicians might as well prescribe one remedy for all diseases regardless of what is indicated, as for one breed of sheep to be recommended for all places and all circumstances. Given nearness to market, small flock, warm quarters, skillful shepherd, indicated some mutton breed best adapted to lamb-raising. Given same conditions as to skill, but greater distance from market, but liberal motions as to feeding, coupled with small flock, indicated some of the largest mutton breeds to be sold at two-year-old. Given poor pasture, large flock, further to market, then every circumstance indicates Merinoes. The important question is not, how can I get the most average income per head with this or with that breed, but, how can I turn the products of a given amount of land into the most money, and to answer this properly, nearness to market, ability as a shepherd and feeder, and number to be kept in one flock must all be taken into consideration.

The mutton craze that is on now is but another turn of fashion. Just now mutton is the fashionable meat. The rich will buy it simply because it is high, and the would-be aristocrats will have it simply because the rich do have it. "Let us make hay while the sun shines." But do not flatter yourself that it is going to last always. What is the cheapest meat for the farmer to grow is not long going to bring the highest price. Competition, and the rapid increase of flocks will soon bring it down to its proper level. But as each wave of the incoming tide brings up the general level of the ocean, so let us hope that the present tidal

wave may not recede to its former level. Let us hope the rich will find out that mutton is the most wholesome of meats and that the poor man may find out that it is not only the most wholesome and nutritious, but the most economical. While we would not say one word against pampering this sudden taste for mutton, but would encourage it by every legitimate effort, it becomes us as good husbandmen to be prepared for the drop when it comes, as come it will if we are to judge by the former crazes of kindred nature. Ten years ago we were told there would be no overproduction of beef. How is it to-day? Five years ago we were told the same about cheese, how far from an over-production are we now? Let your beef producers and dairymen answer.

While the fleece of the mutton sheep is valuable it alone would never pay for the keep of the sheep; then as good business management it becomes us to look well to this part, and while keeping an eye well on the mutton crop look well to the fleece. The kind of wool found on the downs breeds is not of a kind that can enter into any but the coarser sort of fabrics, and we find that two-thirds if not three-fourths of our cloth is made of merino wool. Does this not point us, as it were, with the iron finger of fate, to the place to get our coming sheep? Where else can you find the fleece and such susceptibility of improvement in carcass?

Other breeds than the Merino have produced larger cuts of mutton, other breeds have grown longer wool, others have brought their owners more money for a given number, but where will you find a breed that has stood high in popular favor so long? Where will you find a breed that is more domestic in its habits, one that will respond to good treatment more quickly, one that will come so near filling the bill for a universal sheep? While he is a good herder he is easily confined in proper limits; while he quickly responds to generous feed, none other knows better how to appreciate scant pasture, and, as St. Paul advises, takes what is set before him and asks no question for conscience sake.

A few years ago the mutton sheep craze swept over Ohio,

but what are the farmers there stocking up with now? Is it Shrops and Oxfords? No; it is a large bodied, long stapled wool Merino, and do they make it pay? Look at your market reports and let them answer. While I would not willingly detract one iota from the importance of mutton production, especially in the shape of lambs, I do want to be put on record as saying that it is not adapted to all locations or all individuals. There is room and place for all, with nearness to good markets, liberal ideas as to feeding and a desire to carry only a part of the stock in sheep there is nothing like the mutton breeds; but if you wish to fully stock your farm with sheep and become a sheep farmer pure and simple, where can you turn but to Merinos?

"The coming sheep"—what is it to be, you say? Have you not anticipated my answer? Let me tell you then. A large bodied, smooth Merino which will weigh 125 to 150 lbs. at two years old, will carry a fleece of long stapled, lustrous wool, some 2½ to 3 inches long and weigh unwashed from 10 to 15 lbs. Can such be found? Yes; plenty of individuals and occasionally whole flocks.

The coming sheep must have the coming shepherd to go with him. What must he be? He must be a man with better ideas as to breeding; he must have advanced ideas as to feeding and handling. The silo will be his sheet-anchor, and silage—either corn or clover, or may be both—must form part of the daily rations of his flock from November 1st until May 10th. He must be well up with the times on the value of clover and corn as forage plants, and be capable of carrying twenty head of the coming sheep to every acre of land he plows, exclusive of pasture, on his farm.

DISCUSSION.

Mr. McKerrow—Mr. President, Ladies and Gentlemen: I want to commend the paper. It is good and Mr. Hatch is a good man, but I cannot agree with him in all his statements. The Mereno is a good sheep; but we are in Wisconsin, and Wisconsin is a very favorable locality for the

production of mutton and wool. He speaks of the coming sheep, which I judge will be what Ohio and Pennsylvania flock-masters are now advertising as mutton Merinos. I for one have not had much experience with the mutton Merinos. We have in our locality a couple of farmers who wished to stick to the Merino, and I advised them to send east and get some of this mutton Merino blood. They did so, and every time I meet those men I get a lecture. These mutton Merinos are not as good mutton sheep, or as good wool sheep as they had before. I understand that friend Hatch is developing his Merinos by careful breeding and feeding, and that is all right, for we are in Wisconsin, and there is a large demand spring up for first class mutton, which is lamb, mutton that has to be made from some of the mutton breeds. We are well located to handle these mutton breeds. When we stock our farms with Merinos, we have to keep the young stock too long; they do not fatten as well as lambs, but we must keep them until they are two years old. A fleece of twelve or even fifteen pounds sold at fifteen cents a pound, does not pay us for carrying these sheep a year. When we sell them at two years old they only average about 100 pounds, occasionally a little more, and we have to take four or five dollars per hundred, while mutton lambs are bringing six or seven. That is the disadvantage. Therefore to the average Wisconsin farmer, located near Chicago, Milwaukee, St. Paul or Minneapolis, I for one would say, try some of the middle wool mutton breeds. I care not which. They will breed a larger percentage of lambs. The Merino herd will do well after they are a few weeks old, or possibly a few days, but at the start the mutton breed gets away with them. The mutton lamb can be put on the market from two to twelve months old in Wisconsin at a good profit. The demand for good mutton is rapidly increasing. and we believe it will continue to increase. The actual market reports as they have been for the last year or two, show that high class mutton has been up above average prices. In looking over the reports in the "Drovers' Journal," I see a sale of lambs at $5.50 per hundred; but looking down the items column,

H. H. Eritchman, of Iowa, has sold a carload of grade down lambs of his own breeding and feeding at $7 per hundred. These were grade mutton lambs, and these are the kind I would advise the farmers of Wisconsin to breed.

Mr. Norton — I commenced raising sheep something over 30 years ago. The first sheep I ever had were five, I got in trade; the man was to give me five sheep, and of course he gave me the poorest. My flock sprang from those sheep. I have a good flock of sheep. They are nearly full blooded Merinos as probably could be got up, unless they were registered. Mine could be registered. I usually keep 400 and sell my surplus in Chicago. The expense of keeping my sheep will average just as much per pound as the mutton breeds, at least I think so. I sold from my flock of sheep $1,400.00 worth in one year, and had as many sheep left as I started with. Now the gentleman speaks about selling lambs. How long will it be before he has no sheep to raise lambs from unless he buys them of me or somebody else? The only correct way to keep sheep is for a man not to have an old sheep around him. They are not profitable; they don't shear well, are not good breeders, and hard to keep. Weed out your old sheep, don't let them get old, but feed them with your wethers, and sell them. The way for a man to farm with sheep is to always keep good ones. My opinion is that I can make as many pounds of mutton off from the same number of acres of land with fine sheep as with coarse. Some of my neighbors have the course mutton sheep, I can beat them selling wool every time. I am in favor of the Merino sheep.

Mr. Allen — I have made sheep feeding a business for the past 20 years until this year. I think the farmers of Wisconsin had better go slow about getting rid of their Merino sheep. I think that flocks in small numbers of the larger varieties of sheep may be kept with profit if you want to raise lambs from them, to put on the early market but as the gentleman suggested, you must keep up your flock in some way or you wont have a flock very long. Now, if I was going to buy a flock of sheep to-day or in the fall of the year to feed, I should not pick up the

coarse wool sheep to feed. I have had an experience that has made me very positive on that point. I have related it once before in a farmers' convention here. I think it was eight years ago, or nine, I had an opportunity to buy 400 coarse wool sheep.

Q. What kind?

Mr. Allen — They were Montana sheep. They were good, large-bodied sheep. and I also at the same time bought and put into the same flock a few Merino sheep I got because a man was owing me; they were not the very best of Merinos, but I put them in with the flock. My custom is to keep my scales in my yard or shed, and have representative sheep that I can weigh at least once a week, so as to determine whether I am gaining on those sheep or not. The years before I had been strongly in favor of the coarse wool sheep. I picked them up wherever I could find them, and fed them in preference to the others. Contrary to what I believed, and what I was advised, those little Merino sheep kept beating the big ones all the time. I had a representative sheep I could catch and weigh, and I would go and look at the scales. The little thing kept gaining faster than the others, and as sure as I am alive, before I got through I was thoroughly converted to the feeding of the Merino sheep. They carry about two pounds of wool to the hundred pounds, more than the coarse wool sheep; that enters very largely into the consideration of the profit, and the wool is better. When you want to herd them in large flocks they herd better and are hardier and will stand wet and cold better than the coarse wool sheep. You can't keep coarse wool sheep in large herds.

Mr. Cole — I do not wish to say one word against Mr. Hatch's paper; it is perfect in itself. But this one thing I want to enforce upon this audience — that is, to go slow on those long wool Merino sheep. I have been there myself. For the last 15 years I have bred broad-backed, long wool Merino sheep, the best I could get in our home breeds, and I corresponded with men down in Ohio and in Pennsylvania. I sent down there and got the highest priced buck I could find in one man's flock. From the recommendation

I thought he was just what I wanted. This year I have not used him at all, I don't consider that sheep worth five dollars, and he cost me nearly forty. The experience of other men as it has been related to me convinces me it has been similar to mime. They do not act or look like thoroughbred sheep. We want to stick to the Merinos; we want to stick to those bred at home, picking out the largest of them. We have better sheep at home than you can get in Pennsylvania or Ohio. I have no objection to men sticking right to their mutton sheep and raising early lambs, but if you want to find men who have got rich and bought farms with sheep, you have to look for them among Merino men.

Mr. McKerrow — The improved Merino sheep is a new thing in this country; we have not seen enough of them to get very rich out of them. In reference to what Mr. Allen and other gentlemen contend about keeping up the flock, I heartily agree with them. In breeding we select the best lambs every year and keep them. I do not need to keep a big flock to get a good income. We do not have to keep our wethers until they are two years old. Allow that the Merino wether brings you 12 pounds of wool at 15 cents a pound, $1.80, one year, $3.60 for two years. Fat him, and he tops the market for wethers of that age at $5.00 per hundred you get $5.00. That makes $8.60. Right in the place of that wether you can keep a grade down that will shear 10 pounds of wool that will bring 25 cents a pound, $2.50, two years, $5.00 worth of wool; will raise more than e lamb, but we will say one lamb, which brings you at a fair consideration $5.00, and we have a profit on the lamb of $3.00, which added to the $5.00 makes $8.00; and that ewe in three or four weeks feeding after the lamb is gone will bring you as much as your Merino wether, $5.00 per hundred, $7.50, added to the $8.00 makes $15.50, instead of $8.60. The other day at Caldwell Prairie a gentleman who is a son-in-law of one of the best Merino breeders in this state, as well as one of the largest, told me that two years ago he had to give up breeding Merinos, the foot-rot got into his flock, he could not eradicate it from the Merinos

because of the formation of the foot. He lost his lambs from goitre. He sold them out. He could not farm without sheep, he bought a flock of grade mutton sheep, bred them to a good sire, and this season those ewes brought him $7.10 per head average in sale of lambs and wool, which was better than he had done, with his Merinos.

Mr. Allen gave us his experience in feeding coarse wool sheep, but they are not coarse mutton sheep; those sheep were nondescripts; they were not like a mutton sheep; they were raised on the plains of Montana, and had not had the habit formed in them of laying on mutton. They are slow feeders. If we are going to produce mutton in Wisconsin and make a profit, we must produce a high class article. We must induce the habit of developing from the time they are born, just as friend Grattan develops his roadster horse, giving him plenty of driving and exercise, and with that habit of laying on flesh we will get returns for our feed that will leave friend Allen away in the shade.

Mr. Norton—I do not want to discourage any gentleman from keeping coarse sheep, but I say I will keep a fine wool. If a man don't know enough to keep the foot-rot out of his flock he had better let fine sheep alone. But you can herd fine sheep, three or four hundred in a flock, and they will do well. I don't want to sell a sheep when it is two years old. That in my opinion is no time. He should be kept until he is four. I have made more money out of my sheep business than anything else. I find that this year, or any other year, I can raise twenty bushels of barley to the acre more than my neighbor who has never kept sheep. His land is naturally just exactly like mine; It is the sheep, nothing else. It is the same with my oats and corn, and with my grass. You cannot keep a herd of big sheep in my opinion such as the gentleman speaks of, on a farm without too much trouble; you can these Merinos. I know it because we have done it for years. I can make them weigh 120 pounds. I say, keep sheep, it will pay you just as well as anything you do.

Mr. A. H. Loper—When we started in sheep husbandry we had two or three different kinds. We had to take such

as we could get. We got well bred sheep as soon as possible, and we found we did not like the Merinos. I prefer mutton sheep so far as they are hardy and strong. We don't keep a sheep after it is three years old. One of my neighbors sells his ram lambs every year; this year they averaged 104 pounds.

Mr. Hatch — The mutton breed would be all right if every one had Mr. McKerrow's ideas of feeding. It takes the feed to make them a success; but we have to take the average farmer as he goes, and — I say the mutton breeds, I don't care whether you take Southdowns, Shropshires, or any other breed you can find, are not adapted to the general farmer. We have had in Richland county, Shropshires and Southdowns for fifteen or twenty years, and have not added to the general body of our sheep ten pounds, while we have detracted in the weight of the fleece a great many pounds. I own more mutton sheep than I do Merino, I mean grades of these so-called mutton breeds. A few years ago I let a man take twenty-five head high-bred Merinos on shares. I wanted to breed them for mutton purposes. I went and bought the very best Southdown ram I could find — and Mr. McKerrow will tell you this is as good a mutton breed as there is in the state — and I let him have the use of that ram. He bred them in that line right straight along. The fleece kept getting lighter and the carcass didn't seem to weigh much more, and instead of improving that flock of sheep it is not worth as much into $50 as those twenty-five were when I let him have them. Not necessarily because there is not merit enough in the mutton, but he did not have the mutton breeder's ability to take care of them. You won't find one man in ten among average farmers educated up to the proper stage to breed mutton sheep. Here are facts. Figures will lie, but facts won't. Mr. Woodward, one of the most extensive lamb breeders in the United States, breeds annually from 1,000 to 1,800 spring lambs, they drop along in February and March. Now anybody would naturally suppose he would go right for the mutton sheep straight and simple; but what does Mr. Woodward do? He comes up here to Michigan

and buys up high grade Merinos for the mothers of those lambs. He takes them home, shears them in the fall, puts them into the basement of his large barn, and they never go out until they are slaughtered for mutton. That is one fact in favor of the Merino as a mutton sheep.

Mr. McKerrow — What about the sires?

Mr. Hatch — He uses a Hampshire Down sire. He uses Merino mothers, white, because he cannot find the quiet, gentle, peaceable disposition in any other breed that will stand the close confinement necessary for the high-pressure protection of those lambs, if you have a mind to call it so. One time I got into the notion that I should have some coarse wool sheep to feed. I feed more or less sheep every year; so I went to a neighbor that had some grade Cotswolds; they were nice large sheep, young, lively and sound. I brought them home, put them into my pen, commenced feeding them. At the same time I had 15 or 20 three-fourth blooded wethers I put into the same pen, which at selling time were fatter and better mutton than the others, being so fat that some of them broke down in driving to market, while some of the coarse wools were not reasonably fat; they lacked the feeding qualities.

Mr. McKerrow — I agree with Mr. Hatch that there is no use for a man to begin to breed high class mutton unless he is willing to feed well. I have fed and bred Merinos and handled a good many of them, I know that I can get more money for my feed to-day out of high grade or low grade Down lambs than any other sheep I can feed. I will refer you to sheep feeders such as Mr. Kennedy, and others, who will bear me out. Mr. Day, last spring, at the time this gentleman was selling his three or four years old wether at $4, sent a carload of lambs to Chicago that brought him $7.25. He feeds one to two thousand sheep every year, and scours the eastern part of the state to get all the grade Down lambs he can. He prefers them on account of their quality.

The President — We will close the discussion at this point. We will take a recess until half-past seven and meet in this hall at that hour.

MORNING SESSION.

FRIDAY, February 6th, 1891.

Mr. Allen — I believe that the committee on Resolutions will report if you will allow it. I want to get away home, and would like to have them called up.

The President — What is the pleasure of the convention?

The Secretary — My experience is that the discussion of resolutions takes up a great deal of time, more than we can possibly give them now, and it seems to me we had better adhere strictly to the programme, and at the close of this session a little time may be given for the presentation of the report of the committee on Resolutions.

The President — The committee does not seem to be present.

BREEDING AND FEEDING SHEEP FOR MUTTON.

By JOHN WILSON, of Belleville, Wis.

Mr. Wilson — When I was invited to come before this meeting and tell the people of this convention how to breed and feed sheep, I thought Mr. True made a great mistake, I thought he ought to bring me up here to learn, because I am not an expert. However, I am here, and will try to do the best I can. I have prepared my paper, and as we were told in the committee room yesterday, all this business was the same ground gone over again, or in other words, the same straw was threshed year after year. It is particularly so, I fear, with my paper.

BREEDING AND FEEDING SHEEP FOR MUTTON.

It is not necessary to lay out money with a lavish hand to begin the breeding of sheep for mutton; any common breed that has size and vigor will do. Then mate them with a pure bred sire of any of the mutton breeds; my preference is the Shropshire. Then each year keep all of your best ewe lambs, and in a few years you will have sheep that, if they are well fattened, will bring the top

price; provided, that you infuse new and pure blood each year into them.

There are a great many farmers that keep a small flock of sheep that each year keep one of their own lambs at the head of the flock, and if you remonstrate with them or advise them to do better they will laugh at you and say that there is no difference in breeds. This is a mistake. There should be neither money nor expense considered in the selection each year of a strong and vigorous and pure blooded ram, as it means in the end one-half of your flock. I am aware that there is a great deal injustice done by overreaching people to sell their stock, calling anything that has a black face pure bred. My advice is to deal with none but the best breeders, then you will not be swindled, as they have their reputation at stake; but as I am only an amateur at breeding I will leave the subject and tell what little I know about feeding. Sheep require as little care as any other farm stock, but this care must be timely. The sheep that you are to feed for mutton should have abundant pasture or a field of rye to run on in the fall, or if neither is at hand give them a feed of shock corn in the early fall. Increase by degrees, so that by cold weather you will have them on full feed; also at night put some clover in their racks so that the change from grass to dry feed be gradual.

A great many may ask at what age is best to feed for profit; my advice is to feed lambs, for a sheep ten months old is worth one dollar per hundred more than sheep of any other age, in the next place you don't have to pay any tax on the lamb as he is too young the first season and he is fed and sold long before assessing begins the next year, and I have had no difficulty in making my lambs weigh 115 lbs. at nine months old, and have sold them the last five years at six cents per pound. I would advise feeders to try and get and produce carload lots, as you can do better and if the price don't suit, you can ship them yourself.

In feeding lambs I always feed oats and corn, two of oats and one of corn, about equal by weight. When the lambs are weaned in the fall, put them on good tender pasture, nothing better than stubble fields if their is a growth

of clover, so much the better, or else a field of rye. Put some troughs in the place and teach them to eat in the early fall. Put little in at first, increase by degrees, so that by winter you will have them on full feed. You must be careful in damp weather to keep their grain clean, and feed less or some will get off their feed and lose more in a day than you could put on in a week, also keep your yards well bedded as filth of any kind is bad for sheep. Provide good comfortable quarters with, at all times, salt within reach. Have your barns or sheds so arranged that there will be at all times plenty of pure water, and you will be surprised to see how much they will drink when there is no wind to turn the windmill and you will have to pump for them. In feeding lambs the best way is to have a yard to feed grain in then they are not in your way; then have a wide gate as they will rush out at once; then while they are eating their grain, fill their racks with clover hay and they are again out of your way. I think it best to feed but twice a day; feed enough or about what they will eat up clean.

Try and feed at about the same time each day as they are expecting it, and will let you know if you are not punctual. Provide plenty of racks so there will be no crowding, and if many are kept together, divide them, putting all the large ones by themselves, then the lighter ones will do better; try and keep them quiet and don't surprise them suddenly, but always speak kindly; don't allow strange boys to annoy them, and above all keep them in out of storms, especially sleet or rain, it is far better to let them miss a meal than to get wet in winter. This applies to all sheep, as it is the great secret of having heavy wool.

In feeding aged sheep, I find it best to feed but twice a day. Give a bountiful feed early in the morning of grain, and while they are out eating it fill their racks with hay. I find this the most convenient way, as they are not in your way, which will expedite your work. I have never fed anything to aged sheep but shock corn and well saved clover hay. I find by pursuing this plan that I can keep my stock or breeding sheep in splendid condition by just letting them glean after the fat sheep. I consider it almost an impossi-

bility to fat sheep without having abundance of well saved clover hay, and corn fodder stands next. But it is a good plan to give a variety of feed, as stock of any kind like a change, and sheep are no exception to the rule. Every man that owns a flock of sheep, no matter how small, should every year pick out all that shows signs of loss of vigor or teeth and fat them off, and not wait for them to die of old age because they have been good breeders and have cut big fleeces of wool; remember it cannot last long at the farthest, as sheep is a short-lived animal, and by the time they are six years old they will begin to show signs of age, and in a great many cases their teeth will begin to drop out.

In feeding and breeding sheep the flockmaster ought to be a careful person, one who loves his business and always has a kind word for them. It is not often that you can depend on the average hired man, it will not amount to much if you don't give it your best care and attention. Keep out of the village grocery or saloon where a great many are carving nail kegs and doing a great amount of feeding with their mouths. In a word, give them plenty to eat and see that they have water and salt, good beds and shelter. It is not best to have their barns too warm; have good ventilation, and if possible facing south to insure plenty of sunlight, and if your buildings are not on the north side of your yards, put up a good wind-break, as sheep do not like to be in a strong wind. One thing I nearly forgot, that is in regard to vermin or ticks, as it is nearly impossible to fatten sheep that have them. My plan is to dip the lambs in tobacco water in from four to eight days after shearing, then again in the early fall, so as to be sure that they are all killed. There is a commercial dip that is highly recommended, but as I have never been troubled with vermin I know nothing about it, but presume it is worthy of all it is claimed for it.

The best time to sell sheep that have been fattened in my experience is about the first of March, then all or the most of the half fattened stock has been disposed of. I am aware that this year is a hard one on feeders as grain is so dear and meats of all kinds so cheap. But as we have had

the best of it the last few years we should be satisfied for we know to a certainty that this state of affairs will not happen next year, and as sheep are largely fattened on clover, and as there is an almost unlimited supply what are we to do with it but feed it out, and there is no other stock that will do better on it than sheep.

I have tried almost all kinds of farming and find that I can make the most by keeping sheep, and it is not near so confining as dairying, and there will be no need of me telling you that I have but little education. But the man who keeps sheep is sure of two crops every year, a crop of lambs and a crop of mutton, and I find the men who have stuck to the business for the last ten years in my locality are not troubled with that unnecessary appendage to their farms called mortgage.

DISCUSSION.

Mr. Allen—I want to say—for I am a sheep feeder, having been engaged in the business twenty years—I commend that paper. He knows how to feed sheep, I believe thoroughly, and I wish to emphasize some of the statements he has made in reference to keeping the sheep quiet. There is nothing you can do to a flock of sheep you are feeding that will injure them much more than getting them excited and to running. I make this an invariable practice when I get my flocks together—now, boys, I want you to understand how we fix this thing. We start up and commence speaking to them, "sheep, sheep," keep going all the time, and in that way you will soon get their confidence, and they will not begin to run. There is nothing much more important than that very thing. I want my sheep after one week feeding to be so tame I can walk right around and among them, and they will not undertake to run away.

Mr. Wilson—Will they be quiet if a stranger goes amongst them?

Mr. Allen—If a stranger wants to go into my yard I say: "Will you please walk right along behind me," and I keep

calling the sheep, and the sheep see me, and they think I will protect them. But I keep up the calling. I am going to assure the sheep they are not going to be hurt. In reference to their care — I keep them well protected from the wind, there is nothing more important, and keep the yard well littered, and every man should have his barn fixed with a southern exposure, protected from the west and north. My plan of feeding is somewhat different from Mr. Wilson. I feed them hay in the morning, grain in the middle of the day. After the sheep have eaten their grain they will, within 15 minutes thereafter, go and lie down if the yard is littered, and their faces turned toward the south.

Mr. Sheldon — Do you feed the lambs all they wish to eat?

Mr. Wilson — No sir, rather keep them a little hungry.

Mr. McKerrow — Is it not possible to keep sheep too warm?

Mr. Sheldon — Decidedly.

Mr. McKerrow — How much grain do you feed these sheep a head?

Mr. Wilson — I never took pains to see. I commence feeding by degrees, and feed a little more and more, and whenever they get so they do not act hungry I quit; but I should think a quart would be a good feed a day.

Mr. McKerrow — That is big feed.

Mr. Wilson — I do not think so. You understand, these lambs are vigorous fellows. I always mix the corn and oats together on the barn floor, and carry it out in baskets; one scoop shovel full of corn and two of oats.

Mr. Wylie — Tell us your mode of feeding those lambs from the beginning. How much do you feed when you begin to feed them grain first.

Mr. Wilson — Just a little, to let them know the taste of grain.

Mr. Wylie — When you have reached a quart —

Mr. Wilson — When we have reached all they will stand, a good careful person can soon tell whether a sheep is getting too much. And in damp weather you want to have

your troughs up so the sheep won't get their feet into them.

Dr. Woodford — Do you think you can make them eat a quart right along day after day?

Mr. Wilson — Two-thirds oats and one-third corn is not too much.

Dr. Woodford — That is rather heavier than I have been successful in getting them to eat — a quart a day right along day after day.

Mr. Allen — If you feed them good clover hay, I don't believe you can get them to eat a quart.

Mr. Wilson — There is no use of trying to feed lambs without clover hay. I think they will go down hill on the best of timothy.

Prof. Henry — It was my pleasure to stand by and watch Mr. Wilson feed some sheep to be exhibited in Chicago for the prize fat sheep. Mr. Wilson would put the grain in the feeding trough and stand back and watch the sheep eat. He put in what he knew to be less than their requirements, then he put in a little more; the last time he put in the grain he put in what he thought would be fully enough, and perhaps a little too much. Immediately after the sheep showed they were through eating, he would go and lift up the trough and pour what was left back into the basket, and carry that away. He was trying to get them to eat every pound they could. If he had put what was left back in the trough, the smell of their breath being upon it, they would not eat it. It is said of a great sheep feeder in Michigan that he will not let a person go inside of his feeding yards until the man to whom he expects to sell them, comes; to an accidental buyer, one that does not expect to buy, he says, "I won't take you into the yard." The man he expects to sell his sheep to he will let look at the sheep — if he fully expects to sell the sheep to him, he takes that man into the yard.

Mr. Allen — The professor's statement should be emphasized. And if your sheep have to be caught, catch them by the hind legs. Three years ago a man came into my yard and he insisted upon the sheep being caught. I re-

quested him to catch them by the hind leg, or let me catch them. He caught them by the wool and killed two sheep. They will struggle to get away from a strange man, and that pulls the skin loose from the flesh and the flesh mortifies, and they die.

Mr. Snow — Do you find that sheep feed any better if you stand over them and watch them until they are done eating?

Mr. Wilson — I do not think they do; but I love to do it.

In answer to a question, Mr. Wilson says: I let my lambs drop about the first of May, or last week in April. If there is a little bite of grass it helps the ewe to deliver the lamb — makes a flow of milk. Ewes act wisely in abandoning a lamb they know by instinct they have no nourishment for.

Mr. Clark — How many sheep do you keep?

Mr. Wilson — From one hundred to three hundred.

Mr. Clark — How high grade sheep do you keep?

Mr. Wilson — I have a few pure breeds: some 7-8 and some 15-16.

Mr. Clark — What weight do you usually get them to before you sell?

Mr. Wilson — The old sheep are ewes; I never allow a wether to be past the lamb stage. I have had them average 140 pounds.

Mr. Clark — Have you followed the business of feeding sheep several years?

Mr. Wilson — Six years.

Mr. Clark — What market do you think the best?

Mr. Wilson — I always sell to the shipper at home, and he goes to Chicago.

Mr. Clark — At what time of the year do you find it the most profitable to sell?

Mr. Wilson — I have always sold about the first of March.

Mr. Clark — What weight do you find brings you the best market in March, 100 or 140?

Mr. Wilson — 140. They want to have symmetry of form, and still be fat, and look somewhat alike. It is a fact,

a lot of lambs having black faces and legs brings half a dollar a hundred more.

Mr. Clark — I understand you to say in your paper that you feed shock corn?

Mr. Wilson — That is to sheep that are past the lamb stage, the older ones.

Mr. Clark — You generally feed your sheep that you fatten, on unhusked corn?

Mr. Wilson — Altogether; the other is for lambs.

Mr. Clark — Do you feed your brood ewes any corn?

Mr. Wilson — A very little.

Mr. Clark — I have a neighbor feeding in that way this season; he feeds corn, shock corn.

Mr. Wilson — There is nothing better.

Mr. Clark — Do you think they will do as well as if they had screenings? I have another neighbor who is in the habit of buying screenings, and he gives them all they will eat.

Mr. Wilson — That might be well. I understand it is a very natural sheep feed.

Mr. Clark — On account of wild animals we had to abandon keeping sheep in a measure. The number keeping them is increasing now. When anything is high, that is the time we seek to go into it. I have not gone in yet, but I consider sheep husbandry a very important branch of industry upon the farm. I have heard the other neighbors say the sheep were not doing well fed upon shocked corn.

Mr. Wilson — I fed it, and they did well. Some think sheep feed ought to be ground; that is a mistake; they have a better grinding machine than ever was invented by man.

Mr. Noyes — Have you had any experience in feeding ensilage.

Mr. Wilson — I never used any.

Prof. Henry — I wish to urge upon every man here to write to the Secretary of Agriculture at Washington and request him to send you a book on "Animal Parasites on the Sheep." Write to Secretary Rusk and ask him. You can get it for nothing if they have copies left, and every

sheep man ought to have that book. It is fully illustrated with cuts of parasites and portraits of sheep.

Mr. Clark — I understand the gentleman to say he gets rid of ticks by dipping the lambs some eight or ten days after shearing.

Mr. Wilson — Yes.

Mr. Clark — I have done this. There is a simpler and earier way, and if any one here knows it, I would like him to tell it.

Mr. Snow — I feed them with one-third sulphur, two-thirds salt. I bought a very few years ago, a lot of lambs very badly covered with ticks, and I got rid of those ticks entirely by feeding sulphur with the salt, and I don't think we found any ticks anywhere on the sheep at the last shearing, or any on the flock. We never dipped any in tobbaco.

Mr. McKerrow — I was going to ask some question in regard to feeding sulphur with salt to eradicate ticks from from your flock. I have tried it; it will help, but won't eradicate them on mutton breeds of sheep.

Question — I want to ask in regard to feeding corn. Do you find the best results from giving this in one feed, or two; twice a day or once a day?

Mr. Wilson — Twice a day, morning and evening.

Mr. Wylie — What do you use and recommend for killing ticks?

Mr. McKerrow — I use McDougal's dip. I don't know that it is better than tobacco water. Flock masters have come to the conclusion that it adds lustre to the wool, and cleans out the skin, and encourages the growth of wool. In about ten days after the ewe flock is shorn, you will find the ticks on the lambs. You can prepare the dip in a tank at the cost of one or two cents per head.

Mr. Wilson — Are there full instructions with this dip?

Mr. McKerrow — Full instructions. It is not very expensive.

Prof. Craig — I would like to comment upon some of Mr. Wilson's statements. One thing I noticed, he neglected to mention the age at which he begins to use his rams. There has been considerable discussion in regard to whether a

ram lamb is as suitable to use as a shearling. As far as my experience goes the ram lamb will do as good service, while it may be furnished much cheaper.

There are a few points in the management that I would like to refer to. I agree thoroughly with Mr. Wilson, that the most profitable practice is to market your mutton as lamb. A lamb up to the the age of one year will put on a pound of mutton at one-half the cost of a pound put on a shearling. This is an important point because it enables you to obtain early profits, and is also a great saving in the feed bill. In regard to the management of the ewes. We, with some of our flock have followed the practice of feeding corn fodder. They are doing well on it. We feed our ewes one-half pound of oats when first put in the sheds, and this we change gradually as lambing time approaches, to the same weight of bran. We feed hay and ensilage together. We find that with ewes so fed we have no difficulty at all with their lambs.

I would like to emphasize the point Mr. Wilson made in regard to giving salt, and water. It is the practice of many breeders to allow their sheep to get their water by eating snow. I think it is a bad practice. We have always followed the practice of giving them abundance of water, and also leaving them free to eat salt as they desire it. We have given about half a pound of sulphur to about a pound of salt. In regard to ticks — we have always used tobacco solution. I think Mr. McKerrow's points well taken in respect to the influence of commercial dips on the wool. Another gentleman spoke of constipation. The simplest remedy for that is lime-water. Take ordinary lime and pure water, put them in a vessel and allow them to stand until a crust forms, then break through it, put a couple of teaspoonfuls in a pint of water, and give to each ewe a tea spoon full. We keep this water constantly on hand for that purpose. I think it an equally good remedy for cattle and other stock.

Question — Do you like ensilage for feed?

Prof. Craig — We have been feeding it, and they have been doing well on it. When we started to feed our breed-

ing ewes they made so rapid a gain that we had to lessen the quantity. We only give them three pounds now.

Question — Do you give the ensilage fine?

Prof. Craig — Yes sir, about half an inch in length — common ensilage.

Mr. Welch — Do you approve of feeding corn in shock, or husked?

Prof. Craig — We have fed it husked. In regard to ensilage — some let it take the place of roots altogether — I think it is better to let the sheep have a variety, and if you can, change from roots to ensilage.

Mr. McKerrow — In handling a flock of sheep, is it not essential they should have exercise?

Mr. Wilson — I think it is.

Mr. Clark — I was at the experimental station yesterday. I would like to have Prof. Henry make some remarks about sugar beets. He was feeding them to his ewes. It looked to me as if it was pretty rich food for them.

Prof. Craig — We have been feeding sugar beets for a considerable length of time, and we find that they very quickly scoured. We have been unable to feed over three pounds without that trouble arising.

Mr. Clark — You have to watch them in feeding them anything. You can feed turnips to a greater extent than sugar beets, I think, on account of the sugar in the beet — richness of the feed.

Mr. Allen — I have been accustomed to feed shock corn the last six years; it saves a great deal of labor, with a flock of mature sheep you will find great difficulty in some instances with the scab. I will tell you how I manage it. It one of the most contagious diseases you can get among your sheep, and you should be careful in watching your flock. If you see a sheep pulling the wool, you may know there is a scab there; and my remedy is to take carbolic acid, dilute it, an ounce to five or six gallons of water. Make a suds, and pull the wool apart and turn the solution on to the place. You will find a red spot; it may be as small as the end of your thumb at first, but it is as contagious as the itch, and unless you take it will spread through

your flock. It will not trouble lambs, but it will trouble the mature sheep.

The president—The next paper will be by Mr. McClung of Waterloo, Iowa. (Applause:)

SWINE HUSBANDRY.

I did not select my text, but I wish to thank your secretary for giving me so broad a subject, for I now can hardly wander so far the text that you will be compelled to say of me as the deacon did of his minister. After services one day a member said to the deacon, what a beautiful text he preached from to-day, don't you think so? Yes it was a beautiful *text*, but I was just thinking if the *text* had the measels there would have been no danger of the *sermon* catching them. But my subject is so broad that I hope to be able to keep at least within the boundry lines of contagion.

If we look back through history we find that swine husbandry of some four thousand years ago was looked upon with contempt, and about the only noteriety they had was in showing to what "straits" the prodigal son was reduced, or how hard it is to "head off" a herd of swine when the devil is in them.

But through perseverance and the presistent efforts of swine breeders, we find to day, that swine husbandry stands second to no other live stock industry, and I know of no better way to proceed with the discussion of this subject than to make some comparisons. Horses are represented as the big money, cattle as the sure money and hogs the quick money.

The Sunday-school scholar, when asked, what is the chief end of man, replied, that he guessed it was to get money, and who of you from general observation would dare dispute the boy? Well, if horses are the big money, a general run in that direction might be expected if it was not for the fact that it takes big money to get a start in horse

stock, and not only this but it will be necessary to retain quite a snug sum for "margins" to carry you through the five or six years after your brood mares have been purchased before their produce is sufficiently matured to be ready for the market. Therefore, we think it undeniable that the large majority of horse breeders reached that business through some other channel, and the one most frequently traveled is the raising of swine. There is a class not included in the above; they are those upon whom fortune has smiled, and by inheritence have been enabled to reached the goal at a single bound. But not as most of us "round by round." Neither can we reach the big money via of the sure money (cattle) as easily as one might at first suppose, for this waiting for the stock to mature, and having to have something to keep soul and body together until our returns come in, and with cattle it takes at least three years from the time the breeding stock is purchased before the beef steer is ready for the market or the dairy heifer is ready for the pail.

But how is it with swine? Why bless you, you can in less than five months after purchasing the breeding stock increase your herd (making a low estimate) five-fold — and in three months more the pigs are weaned, the old stock can be placed in the fattening lot, and a profit realized on your first investment before a twelve month has passed, and five times as much stock on hand for continuing the business as was in the original herd. Hence we claim so far as live stock is concerned the hog may well be called the farmers' friend. Yet I do not wish to be understood as claiming that simply geting a bunch of breeding hogs and feeding them corn is all that is required of the man that handles them to secure a profit. Something like a quarter of a century ago, when hogs were worth from ten to fifteen dollars per cwt, almost any kind of management would result in profit from corn and hogs. But in these days of low prices it requires brains in the management of any kind of live stock. There are many ways in which men may raise swine and secure no profit. I think one of the most fre-

quent mistakes is in over stocding, in other words trying to raise more than can be cared for properly.

Many seem to think that as they have made a handsome margin on handling a small bunch of porkers that the same ratio can be kept up on any number, and increase the herd indefinitely without increasing the facilities for handling them thereby having a much larger per cent. of inferior and runty animals who consume feed at a loss and therefore reduce the profit on the whole herd. Still another reason is that not only one man does this but thousands doing the same thing increase the hog product beyond the requirements of the markets and result in a general depression of prices, hence we see that we have two disastrous results from over stocking and I would urge swine breeders to stop this thing of trying to see how many hogs they can raise.

Do not follow the theory that if a thing is good the more you have of it the better, for it is a long way from being a good rule to follow. Suppose you were sick and called in a physician, and after he had made a diagnosis of your case he told you he could cure you, but to do so he would have to give you arsenic in certain quantities, would you double the dose with the expectation that you could regain your health in one-half the time it would require if you followed the M. D's. directions? No, for you know full well that a double dose of arsenic would in all probability result fataly.

Let us take another illustration: Suppose you were a proud man and wished to build a residence grander than any that surrounded you and you take brick and mortar, and you pile brick and mortar on brick and mortar until you have a structure grander than any of your neighbors, but if you continue to pile on brick and mortar (exactly the same material) indefinitely how long before your structure would totter and fall and be a mass of ruins. So in swine breeding there is a limit beyond which if we go will result in loss instead of gain.

Another important point in swine husbandry is the quality of stock kept, and while we boast of the improvement in swine, even to the extent that the Jew has forsworn his

religion and become a pork eater, and certainly the swine industry does lead in the march of improvement and rarely a specimen of the old fashioned razor back is seen in our markets, and many of them changed in disposition and form until they are as docile and symmetrical as the Shorthorn or the Percheron.

But when we travel over the country and see so very many that fall below the standard of excellence it seems that to bring them all up to the form of our best specimens it would require the "perseverance of the saints," yet "the mills of the gods grind slow but they grind exceeding fine;" hence we are encouraged to continue to preach and to practice, and the first step in inproving the quality of a herd is in the selection of a sire. He should be a throughbred and not only a throughbred but a finely formed throughbred.

Do not ask me what is the best breed, for that is a question that cannot be settled; that is a question of soil, climate, market and other circumstances, a question to be settled by each individual for himself and not by his brother. Suit your own tastes as to the breed, but when you have decided, then use your brains, study the breed, characteristics, blood lines, defects, etc., and it will aid you in selecting a male, and after you have secured a male to your liking, do not turn him out with the herd and think you have done all there is for you to do. In fact, you must not turn him out with the herd at all, but handle him as you would a stallion, and see to it that the sows are in good healthy condition and gaining in flesh at time of breeding—this is necessary in both male and female to insure strong, vigorous offspring.

Would you expect to raise a good crop of any of the cereals if you did not have the soil in proper condition at time of planting, although the seed might be of the finest quality. The same is true in breeding swine, then see to it that your whole herd is in fine condition at time of breeding.

Friends, there might be a whole book written on this subject, but believing that there is more good results from short essays and discussions I will now proceed to "sum

up" the points and leave them in your hands for further discussion if it be your pleasure.

First: I realize that the subject is so broad that all the points can not be brought out at one setting.

Second: That swine breeding is really the the leading live stock industry, and as compared with other live stock gives the quickest return, and requires the least capital to run the business and is therefore beneficial to the greatest number.

Third: That it requires time, careful attention to herd, and a study of breeding principals, in order to be successful.

Fourth: That over stocking is disastrous in two ways first by producing a greater ratio of inferior animals, and second by flooding the markets.

Fifth: That you must decide for yourself as to which breed, but that it is absolutely necessary that the sire is a thoroughbred, and the best of the kind that you can get.

And to do this requires brains, brains to buy, brains to select, and mate properly, brains to feed and care for the stock in such a manner as to produce the best results.

DISCUSSION.

The President — The paper is open for discussion.

Mr. Arnold — You spoke of suiting the breed to the soil and climate. Perhaps you can tell us what breed would be best for certain soil and climate, as distinguished from some other.

Mr. McClung — I have not had experience in that matter. I have lived nearly in the same latitude all my life. I have heard men say in the south, a black hog was better than a white one. That is the reason I referred to that. I have found that in the south the Essex were in greater demand.

Question — Is it not a fact that a black hog has a double skin, and a white one a single skin?

Mr. McClung — A white hog is a little more subject to scurf, a little more tender than a darker skinned hog.

Mr. Wilson — Which do you prefer, an aged or young sow as a breeder?

Mr. McClung — A well developed yearling is my preference; but I continue to keep her as long as she produces well. I have one eleven years old; she has produced well. I never discard one as long as they produce well.

Mr. Wilson — Do not they get too heavy?

Mr. McClung — I keep the breeding stock in rather thin flesh; they do not make the growth they would if fattening for market.

Mr. Wilson — Does not an old sow get very cunning — tip over pails and open gates?

Mr. McClung — I presume she would if your gates and fastenings were not secure.

Mr. Wilson — I had one that would throw any gate any blacksmith would hang.

Mr. McClung — The first time she opened it, it was not properly fastened.

A member — I had one in an orchard; she would stand up and shake the apples off the trees.

Mr. Loper — I think an orchard is no place for a hog.

Mr. Anderson — It is the best place for my pigs; they gather up the droppings, and I sow my orchard in peas, and turn my hogs in. It is one of the very best places for our hogs; they never hurt trees. I give them plenty of feed. I commenced pasturing orchard twenty years ago, but I don't keep them in the same lot year after year.

Q.— How many apple trees have you left?

Mr. Anderson — I have not counted them lately. I am one of those men who keep planting every year a few apple trees; I think in this climate it is not the fault of the hogs that apple trees die, it is the fault of the climate. I have some trees twenty-five years old that bore good crops last year. I keep an orchard of six or seven acres.

A Member — Five or six acres in an orchard and you turn in a hundred hogs, there won't be much orchard long.

Mr. Anderson — I have more than a hundred hogs, but I do not turn all my hogs in at a time. Turn in sows and pigs.

Mr. Smith — Why do you retard the growth of your breeding stock — what was the object in doing so?

Mr. McClung — I will say to you in answer to that, that I have visited herds where they kept the brood sows in show condition all the time. I never have visited that place when they had a fine lot of show pigs on hand. The reason of that is they have put the flesh on the brood sows and taken up room for the growth of those pigs; and of course increasing the size of that female, and the fine showy sows made men want to engage for that stock, but when the year came around they didn't have them. Now I believe in this way, that if you want to have the animal in good flesh at the time of farrowing, but thin most of the year, when it comes to breeding time you can put the feed to them, and have them gaining at the time they are bred, and keep that up until farrowing time. Don't feed them too freely, but use judgment. When that time comes you hava them in good condition, and then when they run down and get poor, wean your pigs.

Question — Tell us what the ration is during gestation.

Mr. McClung — I do not follow any direct plan. I feed corn. I know the theory is, don't feed corn. I feed corn in the winter, I think it is a good thing, but not without feeding other material, bran and shorts. I feed heavy shorts all the time through the year to my hogs. I will say right here, a year or two ago — two years ago this fall, Prof. Henry made a speech in Chicago. After I returned home from that meeting there was a gentleman at my place that had not seen my herd for three or four years. He said, "What have you done to increase the size of the bone, the bone is increased?" I said I just came home from Chicago where Prof. Henry showed me the feeding of heavy shorts would increase the bone. I know now by experience that it did it.

Mr. Hatch — I would like to ask the gentleman what kind of ration he would feed with corn at 40 cents, to produce pork at the market price of to-day?

Mr. McClung — I would feed just the same as if the market price was high. When a man is in the business he

cannot drop out of it simply because there are times of depression.

Mr. McKerrow — I would like to ask the gentleman if he would not grow his young breeding stock as rapidly as possible, and develop them on these good bone and muscle producing foods?

Mr. McClung — Yes, sir; I would.

Mr. Wylie — How do you start the pig?

Mr. McClung — Let the sow start them.

Mr. Wylie — How do you teach them to eat?

Mr. McClung — That is an old story. Every man here knows as soon as your pigs are old enough to drink let them commence with a little milk, and after that I use heavy shorts and all the milk I can get, but I have but little of that and never had but little, but it is a good thing to feed, and continue to feed those pigs from the time they are old enough to take it. Watch carefully that they do not get too fat while small, but keep them in smooth condition, and at weaning time be careful you increase the feed, as they lose from the sow. Turn the pigs out and let them have the free run of your pasture, and shut up your sows. I use a clover pasture, blue grass also, but prefer clover.

The President — In growing large bone, do you sacrifice the quality of the bone?

Mr. McClung — No, you cannot do that. There is a great deal in quality of bone. A great many farmers over the country are looking after large, heavy bone. I should try to raise as heavy a hog as I could and keep up quality, but I would not sacrifice that quality for size; that is the important point, and there is quality of bone as well as of pork. I have been to the stock yards and looked over the very heavy boned hogs, I see the majority of the hoofs open and hogs down in their feet — lack of quality.

Question — At what age do you market your hogs?

Mr. McClung — At weaning time, and from that time on.

Question — I mean for pork?

Mr. McClung — I do not handle them for pork.

Mr. Williams — How large can a hog be made — can he be made to weigh more than 800?

Mr. McClung—Yes, sir.

Mr. Williams—My father said he had seen a hog that weighed 1,300; I never have.

Mr. McClung—The heaviest hog I ever saw weighed 1,010 pounds.

Mr. Williams—I saw an account in the paper of a hog that weighed 800.

Prof. Henry—One at the University farm weighs 800.

Question—Don't you think it essential to give these pigs exercise?

Mr. McClung—Very.

Mr. Snow—I have had difficulty sometimes with pigs becoming paralyzed and losing the use of their hind quarters. Can you give us any information from experiments, or any other source as to what causes that?

Mr. McClung—I have seen some of it, but never very much. I heard a veterinary surgeon talking upon that subject; he said it was an affection of the spine, caused generally from some injury; that it might become hereditary, and that it might come from an injury to the dam.

Mr. Snow—This don't make its appearance until they are four or five months old.

Mr. Welch—Can you tell what causes hogs to wheeze and cough?

Mr. McClung—They cough from colds sometimes, sometimes from worms or from dust, different causes, and the remedy would be according to what the disease came from.

Mr. Arnold—Do you think there is anything in the theory that where hogs can get to a gravel hole it will keep off the swine plague?

Mr. McClung—No sir. Charcoal, any stone coal that has sulphur in it would be good for the hogs.

A member—It is a good idea to feed ashes.

A member—Hogs eat sandstone, it must be beneficial.

Mr. McClung—They go and get that brick or stone because of the grit; if you feed charcoal it also has a grit.

Question—Is it not a good idea to feed hogs salt? I know a man that was successful who fed salt every week to his pigs.

Property of George E. Brown, Aurora, Ill.

Mr. McClung — Yes. I feed salt dry.

Mr. Anderson — Hogs are very fond of hard lime plaster; of course I feed out all my hard wood ashes. I have been feedlng lime and ashes for 25 years, and I think it is essential to feed lime if not lime plaster. I keep lime and throw it out on a platform where I feed ashes and salt. I have sandstone on my place, my hogs go and root there and eat sandstone. I want to say to the farmers there is one thing we do neglect, it is one of the best kind of food for hogs, and that is peas. I sow Canada field peas. It is one of the best crops we can raise to give to hogs, and start them early in the fall. I have sown thirty acres a year, and I would turn my hogs into them; they will not waste a peck in an acre; but I never turn them in until the pea is dead ripe. I think a bushel of peas is worth two bushel of green corn.

Mr. Nathan — I give my hogs lump salt and have done so for ten or twelve years. I have not had any disease among my hogs for a long time, and my neighbors lay it to the lump salt.

Mr. Allen — Since we have learned to make butter by better methods we have been in the habit of washing our butter with brine and feeding the brine to our hogs. Through somebody's recommendations we mixed ashes in with that brined buttermilk, and it has produced a wonderful effect. My hogs were coughing before, and greatly troubled me by rooting up the pasture. Since feeding this brine that we used for washing the butter, the hogs have not rooted up a rod square of the pasture for three years, and they do not cough, and are much more healthy.

Mr. Mathews — We carry hogs for pork, a couple of carloads a year, usually, and whenever our hogs are coughing seriously we make a lye from common wood ashes and mix it with slop at the ratio ofabout a pint to a pail full of slop; in two or three days it will check all the coughing.

Mr. Snow — I have a self-feeding box in which I keep salt, charcoal and ashes, and the hogs have access to it all the time.

Mr. McClung — You asked a question about weakness in the back. I will say, I know of two cases where a blister put over the loin cured both animals; that made me fall in line with the idea it was a spinal trouble.

The President — Do you not think that difficulty is the same as what we call in horses, disease of the vasculari?

Prof. Henry — It is quite complicated; I think it is a nervous condition. Perhaps Dr. Woodford can inform us.

Dr. Woodford — I think it is two or three diseases together. This winter we were troubled at the station with apparent paralysis on the hind quarters in animals I think from four to six months old. They give the idea that it is what we call kidney worm. I went down and made a thorough examination of two or three cases. There was no abnormal condition of the kidneys nor of any of the muscular tissues that could be discovered. It seemed to be a nervous trouble.

A member — Is there any such thing as scurvy? I find that a few of my hogs began to act as though they had the scurvy. I did not see much, only they began to want to rub. I have a large stack of rye straw in the yard. I want to know if it is the opinion that rye straw brings about this condition, or what does induce it and what is the remedy.

The President — The next paper will be "Pig Feeding Experiments at the Station," by Prof. Henry.

Mr. Allen: We have a good many of us to take the 11:40 train. Those resolutions introduced I am interested in having considered while I am here. I hope they may be called up if Prof. Henry is willing.

Prof. Henry — I am perfectly willing.

The President — I will abide by the pleasure of the convention. The question is whether the regular programme shall be interfered with at this point and the consideration of the resolutions taken up, or not.

A member—I would ask if Prof. Henry can give us the time after dinner, if the time is now taken, is it going to deprive us from hearing from him?

(Calls for Prof. Henry's paper.)

The President — There is a sentiment in favor of proceed-

ing with the regular programme. I will so do, unless otherwise directed by the convention. (Applause.)

PIG FEEDING EXPERIMENTS.

By W. A. HENRY, Director Wisconsin Agricultural Experiment Station, Madison.

The results herewith presented are taken from the reports of the Experiment Station. These reports are free to all farmers of the state upon application.

FEEDING YOUNG PIGS BEFORE AND AFTER WEANING.

Almost every farmer in the state is directly interested in the subject of pig feeding. At the Experiment Station I have taken this line of work under my special charge, having found it exceedingly interesting and believing that no subject that I might take up will prove more generally helpful to our farmers if the work is well done. The first topic to which I desire to call your attention to-day is the amount of food required to produce 100 lbs. of gain by young pigs before and after weaning. In conducting experiments in this line we feed the pigs for ten weeks before they are weaned mostly through the mother by suckling, but as they attain some age they are fed all they would eat by themselves in a separate trough. The pigs were weighed on the day they were born and weekly thereafter. They were weaned at 10 weeks old. A record was kept of all the food consumed by the sow and pigs before weaning, and also the amount of food consumed by the pigs after weaning. We find that good brood sows shrink in weight while suckling their pigs. This loss was taken into consideration; that is from the total gain of the pigs while suckling we subtract the loss in weight of the sow, calling the difference the *net gain*. The following table presents the figures in a concise form:

FOOD REQUIRED FOR 100 POUNDS OF GAIN.

LOT I.— *Sow and pigs, before weaning.*

Corn meal, 184 lbs. at $.70 per cwt	$1 29
Skimmilk, 482 lbs at $.25 per cwt	1 21
	$2 50

Pigs, after weaning.

Corn meal, 187 lbs. at $.70 per cwt	$1 32
Skimmilk, 562 lbs. at $.25 per cwt	1 41
	$2 72

LOT II.— *Sow and pigs, before weaning.*

Corn meal, 116 lbs. at $.70 per cwt	$0 81
Shorts, 232 lbs. at $.70 per cwt	1 62
	$2 43

Pigs, after weaning.

Corn meal, 115 lbs. at $.70 per cwt	$0 81
Shorts, 230 lbs. at $.70 per cwt	1 61
	$2 42

In the above experiment we have charged $.70 per cwt. for corn meal (about $.40 a bushel), $.25 per cwt. for skimmilk and $.70 per cwt. for shorts. This price is certainly high for the skimmilk and good average prices for the other feeds. It will be seen that with Lot I it cost $2.50 to make 100 lbs. of gain by feeding the pigs through the sow; i. e., suckling them; after weaning it cost $2.72 for 100 pounds of gain. With the second lot, it cost $2.43 before weaning, and $2.42 after weaning. From these and several other experiments in the same line, of which these are fair samples, we have come to the conclusion that the young pig gets its food just about as cheaply when we feed it through its mother as when fed alone after weaning. I should have said that we teach the young pigs to eat just as soon as possible, and that quite a little of the food here charged to them before weaning was consumed directly and not given to the mother. Although our work is not far enough along to warrant any definite statements, I think the results will lead us to the conclusion that profitable pig feeding should begin by feeding the mother sow just as heavily as she will bear while suckling her young, and also giving the young pigs all they can consume at the same time. Of course, care must be taken not to overfeed, especially if the ani-

mals are kept in close quarters, but, aside from this precaution, we urge our farmers to feed their pigs heavily from the start.

COOKED POTATOES FOR FATTENING HOGS.

Experiments were conducted with cooked potatoes for hogs. Experience showed us that the potatoes should be cooked in so little water that after they were thoroughly softened there was little or no water left in the bottom of the kettle. The potatoes were then carefully mashed after being cooked soft and the meal mixed in. The mass was fed as a very thick slop, as the hogs did not seem to like it so well when the potatoes were cooked in much water or when much water was added after cooking. One lot of hogs was fed on corn meal only for the sake of comparison.

Combining our results we found:

(1) 440 lbs. corn meal produced 100 lbs. of gain.

(2) 262 lbs. corn meal with 789 lbs. cooked potatoes produced 100 lbs. of gain.

This shows that 789 lbs. of potatoes replaced 178 lbs. of corn meal, or that 443 lbs. of potatoes equal 100 lbs. of corn meal. This makes a pound of corn meal worth about four and one-half pounds of potatoes, The results are not so favorable for the potatoes as I expected, but such are the facts. I may say in closing, that all the potatoes were carefully assorted and washed before being weighed so that there was no error due to dirt or poor potatoes.

BARLEY MEAL FOR PIG FEEDING.

A very large amount of barley is grown in this state even though prices rule low. Strangely there is quite a prejudice against this grain among our farmers, some of whom even think that it is poison to hogs. We have conducted experiments to ascertain its value as compared with corn meal. A bunch of 10 hogs averaging about 200 lbs. each were divided into two lots of five each. To one lot was given corn meal and water, to the other barley meal and water. After feeding eight weeks we found that

there were required with Lot I 471 lbs. of barley meal for 100 of gain, and with Lot II 435 lbs. of corn meal. This shows it required 8 per cent. more barley meal than corn meal to produce 100 lbs. of gain. The experiment was repeated in a little different form with practically the same results. So far as our work has gone barley does not appear so valuable for pig feeding pound for pound as corn meal by about 8 per cent. However, it may have a higher relative value than this for the purpose of furnishing variety. Having both corn and barley on hand I should certainly not sell all the barley and keep all the corn, if both brought the same price per pound, but should keep a part of the variety to furnish variety. Nothing in our work favors the notion held by some that barley is poison to hogs. We observed that the hogs fed on barley drink a great deal more water than those fed on corn. Our experience shows that the feed should be well soaked before feeding.

FEEDING BONE MEAL AND HARD WOOD ASHES TO PIGS.

Careful, observing pig feeders have for years advocated to use of ashes for pigs. The effects of the ashes have been differently placed by different persons, some thinking that they aided digestion, others that they killed worms in the intestines, and so on. Wishing to find out more on the subject, we have conducted several experiments in which ashes were fed to one lot of pigs, bone meal to another, and to a third lot nothing. The ashes used were from oak wood placed in a small trough in the feeding pen. The bone meal was finely ground bone, a pinch of which was placed in the feed of the pigs each day. We first tried placing the bone meal in a separate trough in the pig pen, but found that the pigs rooted it from the trough and wasted so much of it that we could not conduct the experiment in that manner. The following table summarizes the work of three experiments:

Table showing summary of results of the trials with feeding bone meal and hard word ashes.

	When bone meal was fed.	When ashes were fed.	Nothing.
Corn meal required to produce 100 pounds of gain:	*Lbs.*	*Lbs.*	*Lbs.*
First trial	517	543	858
Second trial	426	417	466
Third trial	518	515	568
Average for three trials	487	491	629
Average breaking strength of each thigh bone:	*Lbs.*	*Lbs.*	*Lbs.*
First trial	417	340	306
Second trial	806	780	292
Third trial	817	625	305
Average tor three trials	680	581	301
Total ash of thigh bones:	*Grams.*	*Grams.*	*Grams.*
First trial	109	97	88.9
Second trial	224.5	215.7	144.1
Third trial	164	138.1	87.6
Average for three trials	165.8	150.2	107

The first part of the table shows that 487 lbs. of corn meal made 100 lbs. of gain where bone meal was fed; where ashes were fed 491 lbs. were required; while where the hogs received nothing 629 lbs. were required for 100 lbs. of gain. The thigh bones of the pigs were dissected from the carcasses at slaughtering time and broken by placing them on iron edges four inches apart with the breaking weight coming down from above immediately over the middle of the bone. Where bone meal was fed an average weight of 680 lbs. was required to break the bones; where ashes were fed 581 lbs., and where neither was fed 301 lbs. only. After breaking the bones they were burned and the amount of ash they contained carefully noted. For the bone meal fed pigs the ash of the bones weighed 165.8 grams; where ashes were fed 150.2 grams, and where nothing 107 grams.

Our conclusions were that the effect of bone meal and ashes was to save about 28 per cent. of the corn required to produce 100 lbs. of gain with the further effect of doubling the strength of the bone by feeding ground bone, and nearly doubling the strength by feeding ashes. Lastly, that in feeding bone meal and ashes we enable the pigs to build up bones with more ash in them. It should be borne in mind that we kept the pigs a long time on corn meal alone during these experiments, much longer than any farmer would think of doing. This is essential in an experiment of this kind. I do not mean to say that any and all farmers can save 28 per cent. of their corn by feeding bone meal, but do believe that these experiments are of great importance in helping us understand the needs and wants of our pigs.

DISCUSSION.

Mr. Wylie — Were these old or young sows?

Prof. Henry — Both kinds. The young sow having a smaller number of pigs, did not lose so much by shrinkage as the older ones.

Q. — In recording the weight they gained while with the sow, did you take out the weight of the pigs when born?

Prof. Henry — Yes. About this ashes experiment. I have said good farmers feed ashes. Why do they do it? They say "it helps our hogs." But that is not science. It is not science to say you get electricity out of a machine by setting it in motion; it is science to know why and how we get it, and how much we could get if we made a different kind of a machine. I wanted to know what ashes did. I had to keep my pigs in a somewhat unnatural condition, and I am sorry for that, but in experimenting you cannot always do just as you would wish. For instance the pigs ought to run out and have exercise, but they would get then to the earth, and they would then root in the earth, and eat a good deal of it, which would spoil the ashes experiment. I had to keep them on a wooden floor. They

ran in a yard, but the yard had a wood floor. We found that the pigs liked ashes, we would add a little every day.

Q.— Do these ashes contain charcoal?

Prof. Henry — There is considerable charcoal in them.

Q.— Do you attribute the good results to the charcoal?

Prof. Henry — Some of the good results from the ashes might also come from charcoal; because there is just as much ashes in charcoal as there would be if you burned it. You don't make any ash by burning anything, the ash is there to start from. I have given you a summary, you can read this report at length from the experimental standpoint. I hope a copy of our reports will be in all your libraries.

The President — What is the relation of oats, shorts and bran, in making up the bone, and quality of the bone?

Prof. Henry — Each of these feeds is rich in bone forming material. We have no experiments to show which makes the best.

Mr. Hill — In feeding potatoes, do you feed them clear, or mix them with meal?

Prof. Henry — We cook the potatoes, and as they became soft the corn meal was mixed through them, making a "pudding" of the mixture.

Mr. Hill — We used some 50 years ago, when I was a young man, to feed hogs peas and potatoes, have our peas ground, feed milk and potatoes; steam our potatoes and mix in the milk, and smash them all up together. That was a much cheaper feed than to feed corn or peas separate.

Mr. Snow — Why do you feed heavy shorts instead of light shorts?

Prof. Henry — That was Mr. McClung's statement.

Mr. Snow — He referred to you as authority for doing it this morning.

Mr. McClung — I said I had been in the habit of doing it with what I considered good results, and I left it to Prof. Henry to bring out the scientific part.

The President — I want to know the comparison between

oats, shorts and bran in the production of bone, as to size and quality of bone. I breed some young trotters.

Prof. Henry — Our investigations in that line are progressing, but we have not got down very far, and I cannot help you a hundredth part as much as I should. In the wheat grain the nitrogen and the ash lies near the outside of the kernel, in the bran.

The President — There is nothing in the bran itself?

Prof. Henry — Yes, the bran is in some respects the best part of the wheat grain. When the miller lays the wheat open under the roller process and rolls it, he labors to get the starch out, while the nitrogen principally is left with the bran; he gets some of it, but compared with the wheat itself, the bran is richer in nitrogen. So that 100 pounds of bran is worth more for the nitrogen and ash, than 100 pounds of wheat.

The President — Is there not more muscle food in oats than in bran?

Prof. Henry — No, sir. There is more muscle food in bran than in oats. In keeping a horse up you have to give him both carbonaceous and nitrogenous food, and the oats come nearer being balanced in regard to these two essentials, than bran alone. A cow likes bran because she ruminates and can better digest a coarse food like bran. A horse does not like it so well, preferring shorts, which is not so chaffy as bran. I do not advocate feeding much bran to pigs, it is too coarse and chaffy. Feed bran to cows, shorts to pigs and horses.

Question — What do you think of mixing the bran with fine middlings?

Prof. Henry — It would help materially for pigs and horses.

Mr. Adams — It has seemed to me, in practical feeding shorts fed alone are decidedly superior to bran. Of course we are liable to be mistaken in our judgment in these matters. I have noticed this when I changed from bran to shorts, my cows increased in their milk flow. Changing back from shorts to bran, it diminished.

Prof. Henry — In a hundred pounds of shorts there are

several pounds more of carbhydrates than in one hundred pounds of bran. Much of the shorts we get to-day, is a bran made finer, and it is hard to detect the difference between bran and shorts. One is coarse, the other fine. For cows I think I prefer the coarse bran.

Mr. Goodrich—Cows like the coarse bran the best.

Mr. Adams—Mine do not like it as well. My bran is such as we get in the Madison mills.

A member—I have found to my satisfaction in experimenting with milch cows, without silage, the best feed I could give them for quantity and quality of milk, was coarse bran shorts and corn meal ground fine in equal proportions by weight. That is my experience. I would like to ask Prof. Henry if there is anything in mixing, why? There should be a good reason, or is it my imagination?

The President—I rule the question out of order; it is not applicable to the swine question.

Dr. Woodford—I would like to ask Prof. Henry if he has made any comparison in the size of those bones.

Prof. Henry—That is a pertinent question. No, sir, not so far as our work went. We have tried to determine the actual size of the bones, but it is a difficult problem. Here is a cavity. As far as we could ascertain we did not make a larger bone by feeding ashes or bone meal, the difference being rather in the solidity and quality. I suspect that is not all that story, it is only a few words of a long chapter. Mr. McClung just told you some things in his paper about the bone question. We have much to learn yet.

Mr. Linse—You spoke of fine corn meal. I would like to ask whether it is any benefit to grind corn into meal to feed to stock hogs, at the present price of corn. I practiccd grinding corn quite coarse, and feeding it in a dry state to my stock hogs. A young hog which gets a limited amount of corn, is apt not to grind the corn, I grind it for them, whether this would be an advantage or not I do not know. I was told it was not.

Prof. Henry—This grinding question is a very complicated one. Sometimes hogs and horses will do better on whole feed, sometimes it goes the other way, and you have

to watch the manure, watch the droppings of farm animals, put them in a pan of water, stip them with a stick, and get at the proportion of unground grain. I cannot tell you which is right, you must settle this yourself, and you are not as good a feeder until you do what I describe. Suppose I insist you ought to grind that feed. I do not know the conditions of your stock. If you wash that manure and find whole grain passing through the hogs, then grind it; and if it seems to be worked up fine and well digested, I should say it will not pay to grind it. I can point to some experiments where it paid to grind, some where it did not.

Mr. Emerton — Some one asked if the feed increased the size of the bone. We were led by the gentleman from Iowa to understand that his system of feeding did increase the size of the bones. Do your experiments bear him out in his theory?

Prof. Henry — We have not made experiments enough in that line to know, but I do not see why his judgment, after the long experience he has had, is not a better indication than anything I can say at present on the subject.

The president — Do not you think that feed effects more readily quality in bone, than it does size?

Prof. Henry — Yes, sir, I thing the first thing is quality. You breed from those animals and you will change size.

Mr. McClung — About the bone — I said I thought the size of the bone in my herd had increased. A gentleman who visited my yard thought the same thing. The professor says that bone weighed more, didn't you — the ash?

Prof. Henry — Yes, sir.

Mr. McClung — Show a little more substance. I presume it was like a field of corn, you see it to-day in the morning, and see it again in the afternoon, you cannot detect it has grown, but if you see it in a week, you can. I have been breeding those hogs for ten years; I presume it increases so gradually you cannot detect it from morning to evening, but you would in ten years' time. I want to ask a question in regard ashes and charcoal, how that comes in

with the feeding of soaked corn or different ways of feeding corn.

Perhaps that animal's stomach is a little out of condition. We have been told that charcoal will rectify that, if you feed a little charcoal as you change from dry to soaked it may have produced a result, that either would have done the same, you base your opinion on the result. I think it is a good deal according to the condition of the animal, and some little thing may change it, and you attribute the cause to one thing or another.

Mr. Clark — I was at the station yesterday, and we found a hog there what we would call a mature hog weighing 710 pounds. How many of you men have been out there? I would like every man that has been there to hold up his hand. (Many hands raised.) The Professor has taught me many things I never would have known if it had not been for him, or some man like him. I go there every time I am in Madison, because I am interested in the welfare and success of my neighbors as well as my own. The stock looks the finest there that I have ever seen it on the farm. It is an important thing to me and to every other breeder of swine. He has got now some pigs he has been experimenting with, feeding them separately; you can all see them. — Five cents to get out there on the cars — they are all fed separately, know what they are getting. I want to see what it costs to make a pound of pork fat on a growing animal, weighing 100 pounds and to put a pound of fat on a mature animal weighing 700 pounds, that is nature.

Question—Is corn a complete feed at the finish?

Prof. Henry — Almost, but not quite. Better feed a little shorts or oats.

Q.— Do you get any different grade of pork by feeding something else?

Prof. Henry — Yes, feed influences the quality of the meat.

Q.— How is rye for a finish?

Prof. Henry — I should not feed much rye as a rule for fattening, because it costs more than corn.

Mr. C. E. Jones — We are feeding a small feed of clover hay, and I would like to ask the question if you would advise feeding clover hay to brooding sows.

Mr. McClung — I have fed clover, and I think good clover hay would be a nice ration. A gentleman from Missouri who has had considerable experience in feeding clover hay says the best results he ever had were when he fed clover hay mixed with heavy shorts, fed in winter. He said it seemed to act on the corn and other food, and make everything digest.

Mr. Linse — I cut up good nice clover hay, pour it right into the trough, and pour the slop food on top of the clover hay.

Prof. Craig — One of the best Canadian feeders feeds all his breeding stock with good clover hay. He cuts it and steams it with his turnips.

A member — I would like to suggest a thought. I would like to know how a man that goes to a breeder and buys a hog is to determine whether that hog has good bone or not. Ordinarily a farmer goes and buys a hog that has good sized bone. In my opinion he cannot determine by the size of the bone anything about the quality.

Mr. McClung — I think a man can determine a good deal by the looks of the bone, I think you can tell something of the quality of that bone. I think if you are buying a horse, the first thing you will do is to examine the horse's leg — if you are a horseman — and determine in your own mind whether there is good quality in the bone from the shape and form and smoothness, and the way he stands on his feet. A hog that stands up straight, and has a smooth bone, that bone is of better quality than if a little inclined to be sprawley.

Q.— Do you think where the hair is rough, it is indicative of a weak bone?

Mr. McClung — Yes sir — porous.

Q.— Don't you think there is a difference in the breed of hogs about their standing on their feet?

Mr. McClung — There may be a difference in the breed of

hogs in that respect; this has been caused by the breeders taking more pains with that certain breed than others.

The President — Do you not think that some breeds are better boned animals to start with, than other breeds?

Mr. McClung — I cannot go clear back to the start. I could not tell you.

The President — Some breeds of horses are better boned. Can you by selections from that breed, selecting the best boned every time, improve the breed?

Mr. McClung — Yes. I think if I was going to enlarge the bones of my pigs, I would do it by selection.

The President — The quality can be affected and improved by the feed.

Convention adjourned until after dinner.

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2 P. M.

The convention was called to order by Mr. H. C. Adams in the absence of the president.

Mr. Adams — At the request of the secretary I have consented to preside over this convention during a portion of this session. The first paper upon the programme is "Test of Milk by Dr. Babcock's Method," conducted by Mr. D. W. Curtis, of Ft. Atkinson.

MILK TESTING.

By Mr. D. W. Curtis.

I am not an expert in milk testing — far from it; and that is the reason, I suppose, why I have been selected to show how easy it is to determine the value of milk by the Babcock test, reasoning that if I could succeed fairly well others would do even better.

I am not to tell the component parts of milk, how much casein, sugar or water it contains, but only how much fat. What Wisconsin dairymen want to know more than any-

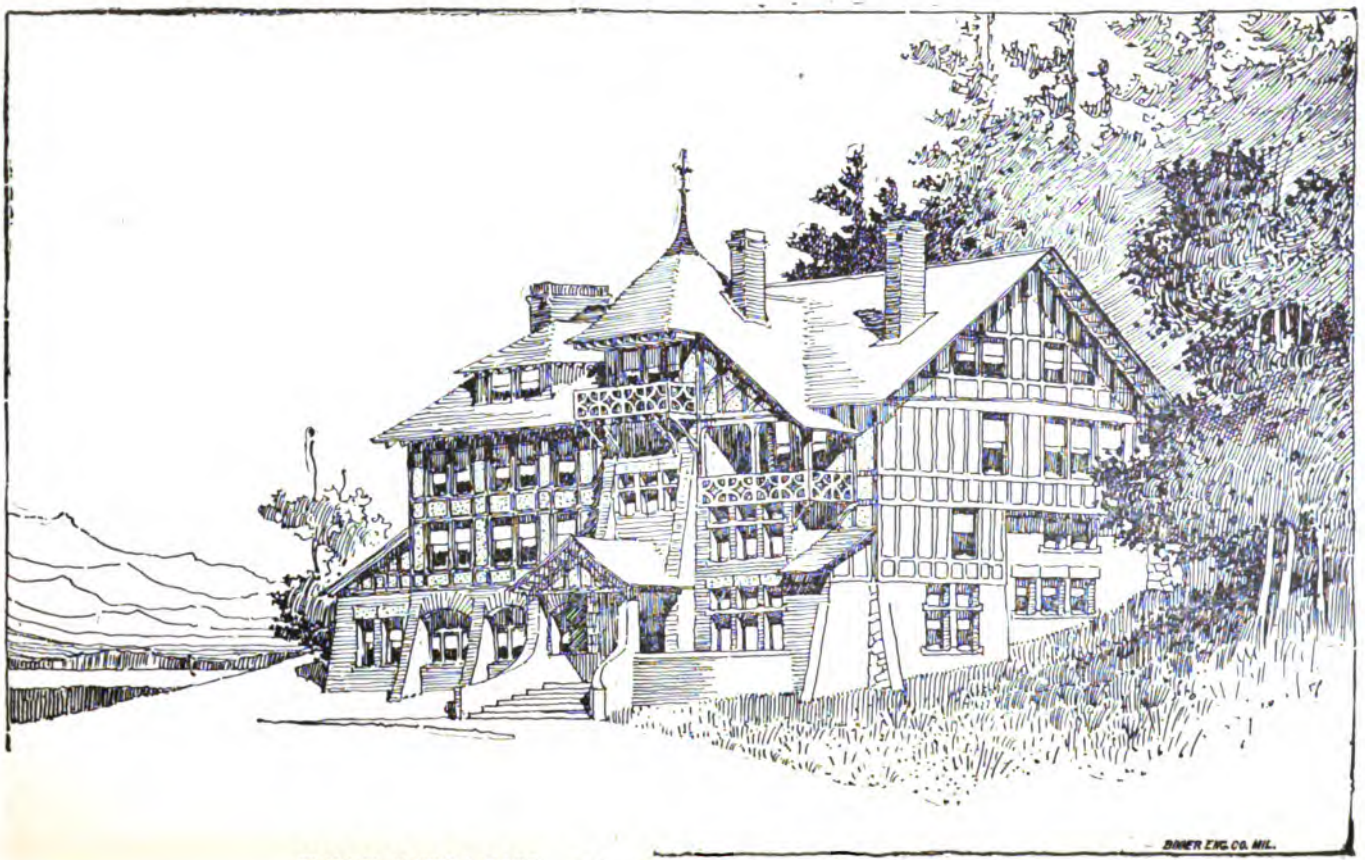
thing else, whether buying or selling, is what per cent. of butter fat there is in the milk. They do not care about the casein or sugar, but they *do care* a little sometimes about the water.

The laws of Wisconsin say "lawful milk shall contain not less than 3 per cent. of butter fat," but with equal emphasis prohibit the adding of water to bring it down to that standard.

Cream has been bought and made into butter, for years, on the basis of the butter value found in it. Formerly every inch of cream measured in a 12-inch pail was supposed to churn out a pound of butter. The oil test churn upset that practice by showing that some cream would only make a half to three-quarters of a pound to the inch, while other samples would carry a pound and a half to the inch; and now each patron receives pay for his cream according to its butter value.

The general practice now at cheese factories and creameries, where separators are run, is to pool the milk, on the theory that milk is milk, and all is just alike. The patron with good cows that have good care kick vigorously at times, while the other fellow says never a word. The fact is that in every creamery and cheese factory where milk is pooled, at least one-third of the best patrons are contributing to the welfare of the patrons with the poorest cows. In other words they contribute a little each day from the value of their own milk to that of their neighbor. Suppose one patron furnishes daily 300 pounds of milk containing 3 per cent. of butter; another the same amount, but containing 4 per cent. of fat, and it is pooled to make 25 cent butter. What would be the result? The 3 per cent. milk would make 9.81 pounds butter daily; the 4 per cent. would make 13.32 pounds of butter. One would be worth $2.45, the other $3.33, a difference of 88 cents, for one day only. This for a year makes $321.20, one-half of which (or $160.60) he gives to his neighbor.

There is more of this "give and take" in the milk business, and with less complaining, than with any other business with which I am acquainted. And why? Because the



HIRAM SMITH HALL.—Dairy Building, University of Wisconsin.

dairymen who produce the milk do not know how to remedy the trouble, although they do know it is there.

Dr. Babcock has fortunately come to the rescue after long months of patient studying and experimenting. It is now possible for every man to test his own milk for its butter value. He can determine for himself whether different kinds of feed have any affect on the quantity or quality of the milk; which is the poor cow and which is the good one; whether chasing the cows with the dog is profitable or not; in short, he can tell exactly what he is doing.

The cheese factory and creamery can take in the milk according to quality, and the patron can test this same milk to ascertain for himself its value; and milk may be bought and sold, or pooled, and everyone get what belongs to him, and no more.

You now ask, what could I do with a Babcock machine if I had one?

Let me ask you if you keep cows for profit, or from force of habit? If for profit:

Test each cow in the herd for the butter fat the milk contains; sell the poor ones.

Test them and ascertain whether different kinds of feed stuffs have any effect on the quantity or quality of the milk.

Test them on hot and cold days; leave them out in a cold storm all day, and note the result.

If you make butter, test the skim milk, and see if all the cream has been saved; test the butter milk and see what the loss is there.

There are more losses in the milk business than you are aware of, unless you have done a little experimenting in that direction,

If you are a cheese or butter maker, take in the milk for the butter fat it contains, giving to each patron his just rights.

If you make cheese, test the whey and see how much butter fat is lost, and to what extent the patrons are wronged by a poor cheese maker.

If you are a butter maker, test your skim milk to see if the separator is doing its word well; then your butter milk, to see whether you are wasting your wages or more, by loss of butter which you did not recover in churning; and whether it would not pay you to spend a term or more at the University Dairy School.

While Mr. Curtis conducted a test of samples of milk, the following discussion took place:

Prof. Henry — While Mr. Curtis is at work, I wish to say a word about the test. A couple of years since, Mr. Short got up what is known as the "Short Test," an excellent method of milk analysis, and at that time probably the best in the world as a simple, inexpensive method of milk analysis. Not long after Prof. Patrick brought out one simpler still somewhat expensive. Last year, at the Illinois State Dairyman's meeting, a little earlier than this in the new year, I saw there must be a still simpler test. I said to Dr. Babcock on my return, "I think we ought to try for something simpler." Dr. Babcock said, "I have an idea I would like to try." Starting the last of January, he worked until March or April. He had a method he thought perfect. We were about to issue a bulletin when we happened to strike the milk of one cow we could not analyze by that method, and the doctor had to start over again; and what you see here is the result. We are thankful to this cow, because in our other method we used either to bring up the fat instead of sulphuric acid, and ether is more expensive; this is a cheaper method. Some of you will say, "That takes a great deal of time, I don't think it is simple. There have been hundreds and thousands of men at work on this problem, scarce one of whom have struck a method of milk analysis both simple and accurate. This method, so far as tested has never been pronounced inaccurate, even in a small degree.

The Chairman — I would like to ask Mr. Curtis what that machine cost, and if that is the smallest size made.

Mr. Curtis — The smallest size costs $10.

Question — How low a test is allowable with a cow, it would pay to keep?

Mr. Curtis — If I had a cow that did not test about three per cent., if she should give a wash-tub full, I should sell her. Then I should want to take the milk to the cheese factory where they pooled it.

Q. — What do you call a fair average test?

Mr. Curtis — The best reference I can give you is Commissioner Thom's report of last year, of some two or three hundred tests made by himself and Prof. Short, and shows what the average is. Some samples test 3 per cent. and below; a great many test 3½ and 4 per cent. Cow's milk at this time of the year ought to test 4 per cent., 3.90 or 3.80, something along there.

Mr. Robertson — A cow tests three per cent., how many pounds of milk would it take to make a pound of butter?

Mr. Curtis — 100 pounds of three per cent. milk would make 3.27 pounds of butter.

Mr. Robertson — Then a cow giving 50 pounds of milk a day, would give 3.27 in two days?

Mr. Curtis — Yes, sir.

Mr. Robertson — Would that be a good amount of butter for a cow to give?

Mr. Curtis — Yes sir. She won't give 50 pounds.

Mr. Robertson — You said a wash-tub full; that would make more than 50 pounds.

Mr. Fleming — This method tells us the possibilities of the milk, but not what we get out of it.

Mr. Curtis — It tells what should be done, but not what is done.

Mr. Robertson — If we manage well we ought to get that out.

Don't dairymen calculate to get all out of the milk, that are making a business of dairying, making butter to sell?

Prof. Henry — They have lost millions of pounds of butter in this State that they might have got out, they blindly lost because they did not know what they were doing. Separator factories are losing it, and creameries, and private dairymen losing it right along.

Mr. Curtis — I had occasion the other day to test some butter-milk in a factory where they were churning about 225 pounds of butter a day. They told me how many pounds of buttermilk they had. We tested the buttermilk and we found his loss was 44 pounds of butter that went off in the buttermilk.

Mr. Bender — I want the Professor to suggest a remedy. If we lost that amount every time we churn, we ought to have some light thrown on the subject.

Prof. Henry — That is not an easy thing to tell. The first thing is to get a test, and study your work. Watch your skimmed milk. Some find they are losing one half of one per cent. You say that is not much fat on 4 per cent. milk, it is 12½ per cent. of all the fat in it. You must study your methods of cream raising, churning etc.

Mr. Adams — I would like to ask if this test shows five pounds of pure butter-fat in 100 pounds of milk, if the butter-fat is recovered in the churn with the addition of water and salt, and the other elements that go into butter, what percentage do you add to the five per cent. to give you a commercial product?

Ans. — A pound of fat will make 1 1-10 lbs. butter, making allowance for loss.

Prof. Henry — Allowance for minimum loss.

Mr. Snow — My idea is the farmer needs this test. He sets his milk by a certain system; he ought to test his skimmed milk and buttermilk. Knowing his loss he begins to hunt to save it. You may have lost your pocket book, and gone days without worrying about it. Why? Because you didn't know you had lost it. The minute you found that article was gone you bend every energy to find out where it had gone. When we find that we are losing we begin to hunt for the causes, and for the remedy; sometimes it is one thing and sometimes another.

Mr. Bender — It seems to me that that little machine will repay any farmer or dairyman the outlay. We all have to buy and sell more or less. With one of these at hand we could find a cow that would please the eye, one we would like to purchase, we can take a sample of the milk and de-

termine by that whether we want the cow. I bought an Elgin cow recommended as first rate, and my son, by Prof. Short's method, demonstrated that I had a cow that gave 2 and 1-8 per cent. I brought some milk here yesterday of a three-fourths Jersey cow by request, and the sample is as good as the best here to-day. I bought her simply on the blood that was in her, but she has proved to be a good cow; if I had a tester and got a sample I should have known it before hand.

A member — Then you could not have bought her, he would want $10 more for her.

Mr. McClung — You were speaking about getting the butter-fat, there is some left in the milk. Is not the milk used for anything? Is it not better feed if there is a little butter-fat left in it?

The Chairman— Yes. It costs too much per pound. We cannot afford to feed butter to pigs in Wisconsin.

Prof. Henry — Now here is what I want Wisconsin farmers to work to. We are beginning to be systematic and business-like, and I have been working for it. But I am going to start in dead earnest on this point, beginning with our students and those that attend this convention, that there shall be a record kept in every barn of the milk yield of every cow. The only way you can judge your cows is to have in the barn a record sheet, Name your cows. You can go to a printing office and buy for fifteen cents, enough paper to last you a year. Tack a ruled sheet on a pine board, and keep an account. If you want to be very accurate weigh the milk every milking, and every day. I would not urge that, but weigh at least one day in a week. I recommend this, and I am going to push it until upon ten thousand farms in this state there is a record of milk yield kept, and when a man comes to the convention, he will say, "I had a cow that produced 5,000 or 7,000 pounds of milk and so many pounds of butter-fat in it by analysis. Then we will hear facts worth discussing. Then our Jersey and Holstein friends can bring their knock-down arguments to support their assertions. Let every farmer that is in dead earnest about the dairy business, keep a record,

and when we come together in the future, let us have facts to talk to, and not assertions that we have *the* breed of cattle, and the other fellow has one worth nothing.

Mr. Worthington — I want to ask the professor how these new butter extractors pan out — how much fat is lost in those?

Prof. Henry — Our butter extractor working at the dairy school the fat left 2-10ths of one per cent. I think it did better than that sometimes. The separator ought to leave under 1-10.

Prof. Short — We often talk of losses in skimmed milk and buttermilk. During the last two years in visiting creameries and cheese factories, I have noticed sometimes one-third of the fat that a herd of cows gives goes into the coffee; at other times it goes into cream made into butter and sold. I have taken samples of milk from creameries and cheese factories. I found in many cases under one per cent. of fat, and the highest was six and one-half. I think in talking about losses, you who own creameries and cheese factories want to take that into consideration, and consider it prayerfully. Another loss is the fact that the can will get under the pump, and the little girls will pump into it.

Mr. Pilgrim — I would like to inquire if the time lost in keeping accounts would not be worth more than the profit he will get. I am well acquainted with one of Prof. Henry's students, he happens to be a relative of mine — he has been taught to follow up the rules and regulations of testing and dairying. He has some cows of his own that he is testing. His mother is making butter in the old-fashioned way. The mother is beating the boy with his new-fangled ways, and when the butter goes to the market, "Well, this is not your make?" "No, it happens to be my son's that has come from the university." "Well, we don't want this butter, we can't use it." I see Prof. Henry has left the room, or I would call upon him to answer how the boy is making so grand a mistake.

Member — He can afford to lose that butter if he gains some good practical ideas.

Mr. Pilgrim — As the professor is now here I will state the question, unless the professor heard it.

Prof. Henry — I doubt very much if the university can turn out every young man perfect in everything he attempt. I never knew a school that did not send out some young men that were failures.

Mr. Adams — A boy is likely to take after his father.

Prof. Henry — I do not know of any business that can be run successfully without strict accounts being kept. It don't take thirty seconds to record the product of a cow. I don't see why it is necessary that he should make third-rate butter because he spends five or fifteen minutes a day seeing where he stands. I have seen young men start locomotive engineering, and try six months and fail. But there are men who can run an engine. I have seen many a man fail in running a farm, and I expect some of our boys are over zealous and watch the account too closely, but after learning the accounting they will learn the other things in good time, and they will make more profit than the old lady made, that I will guarantee.

Mr. T. J. Atwood — I want to say just one word on the question mentioned. I believe it is important that a young man should learn system, order, method and plan for everything; and I believe, further, that any young man who has not a system, has not order, keeps no accounts, is almost a failure to begin with. I can predict a failure to any one who has no order, system, or plan of doing a thing. Therefore, if it was nothing except the order, the habit of doing a thing in a systematic orderly way, I say that is a grand thing, the young man has learned one important lesson if he has learned to record what he has done. Therefore, I believe that insisting on a young man placing down, knowing at night just what is done through the day; if it taught nothing more than the habit of system and method, it is a grand thing; he has learned one lesson essential to success in life.

Chairman — The next paper will be

WHAT I FOUND BY TESTING COWS.

By C. V. PORTER, of Viroqua.

In the winter of 1888 and 1889, I commenced using Short's test in a dairy of 28 cows and heifers. Half of the herd were half and two-thirds grade Jersey heifers 19 to 28 months old, which accounts for an average butter yield of only 155 lbs. during the test year. I have estimated the cost of keeping a cow in good condition at $25 a year. The butter for the test year beginning September 15, 1888, netted about 19 cents a pound. On this chart I show you the approximate amount of butter made by each animal, together with number of pounds above or below estimated cost of keep and estimated profit or loss given by each cow for the year ending September 15, 1889. This statement is predicated upon the butter product alone, and I have not reckoned growth of heifers and 15 heifer calves, value of skim milk or veal calves or fertilizing material into account.

On the basis of my tests four mature cows and six grade Jersey heifers failed to pay their keep. Three of those mature cows were sold, and one kept on probation, but as she did worse next year she was disposed of.

The four best animals paid that year a profit above cost of keep of $101. The four poorest a loss of $31. These test estimates were made independent of the butter record and footed up 4,351 lbs., while the butter record was 4,326 lbs. I was well satisfied with this year's test work, and resolved to continue it until every mature cow was weeded out if unable to pay her board in butter. I had paid out $15 for apparatus, and had sold three mature cows, one of which I had paid $10 for the privilege of milking for a year. I had learned which were the best cows and to those fed more grain, and especially to the young Jersey heifers who were carrying on the double work of growth and lactation.

I turn with reluctance to my second year's test work. The cows were better fed and cared for than during the

year before, but in no way is the year's work as satisfactory. My test estimates gave about 600 lbs. butter more than the butter and cream record gave, or about 18 lbs. more per cow than the average made by the herd. I had therefor to go over this whole subject again and cut down the estimates, and so cannot say they are all very close approximations. This variation is probably due to my not having made a sufficient number of tests of each animal. The first year I made four or five tests; this year twenty cows were tested but three times, and some of those tests were failures. So I conclude that in using Short's or Babcock's tests we should have at least five good clear tests of each cow yearly if we would have the data required to make test estimates harmonize with butter record.

As nearly as I can learn the thirty-three cows and heifers have given about 4,980 pounds of butter during this test year, or about 151 pounds each; four or five pounds less than last year. I attribute this falling off in amount of butter to several causes. Five grade Jersey runts were added to the herd, having already twelve immature animals. One or two very old cows failed to do as well as last year, on account of age. A young short-horn cow tested 217 pounds the first year, took on fat and gave but little more than 100 pounds the second year, and was sold. But the best reason why this herd failed to do better than the previons year is that while the first year they had averaged thirteen months and twenty days between the dates of calving, the last year they averaged only ten months and fifteen days. In other words the first year they were bred on an average, nineteen weeks after calving.

The second year only six weeks elapsed between time of calving and time of breeding. In trying to bring the herd around to calve in September, I had cut down the butter yield, and no doubt did injury to some growing animals. The butter this year went mostly to commission men, and after deducting freight, cartage and commission, it sold for 16⅔ cents net for the whole year. Let us assume that it cost $25 a year to feed those cows and heifers. Six pounds

of butter netted $1. Then it took 150 pounds of butter each cow made to pay her keep. Now on this basis there are six mature cows and ten heifers out of thirty-three animals that have not paid cost of keep in butter product. The butter has sold only two or three cents below Elgin quotations. The cow stable seldom freezes in winter. The cows are allowed only a short recess in cold weather and are not allowed to run up and down the snow banks for exercise.

I have given you my experience as a winter dairyman, selling good butter and feeding about $6 worth of bran, oats and corn each, during last winter, besides nearly a ton of sweet corn silage, and quite a quantity of carrots and mangolds to each animal. I admit the showing is very bad, but what would have been my story had these cows been fed like the average Wisconsin cow, and milked from April to December, and the butter made into rolls and sold at the store?

Again, what would have been my statement here to-day had all paid as well as the first on the list, who furnished six pounds of butter for a dollar and then gave us $27.50 above her $25 yearly board bill. Thirty-three such cows as No. 1 would have paid me $797.50 above estimated cost of keep in butter alone the past year; whereas they did pay 16⅔ cents profit each, or $550 instead of $797.50. That gives one an idea of what mixing poor cows with good ones will do to knock off the profits of dairying.

I hope that 500 dairymen in Wisconsin will be using Babcock's test machine in their stables before this society meets in convention again. Especially let breeders of full-blood dairy stock test their whole herds and confirm their estimates by the butter record. Let the buyer test a cow before he buys her. It is well to know what the cow makes in a day or week, but her yearly butter record is of more value.

Chart No. 1, to accompany Dr. C. V. Porter's paper on testing cows:

Average cost keep of cow, $25. Butter netted 19 cents a pound. Hence, it took 133 pounds butter to support average cow 1 year. (September 15, 1887, to September 15, 1888.)

No.	Made	Or		Profit.	Loss.
1	321 Lbs.	188 Lbs.	More than cost of keep	35.72	
2	188 Lbs.	108 Lbs.	More than cost of keep	9.35	
3	271 Lbs.	138 Lbs.	More than cost of keep	26.22	
4	174 Lbs.	41 Lbs.	More than cost of keep	7.79	
5	217 Lbs.	84 Lbs.	More than cost of keep	15.96	
6	117 Lbs.	16 Lbs.	Less than cost of keep		3.00
7	143 Lbs.	10 Lbs.	More than cost of keep	1.90	
8	135 Lbs.	2 Lbs.	More than cost of keep	.38	
9	143 Lbs.	10 Lbs.	More than cost of keep	1.90	
10	196 Lbs.	63 Lbs.	More than cost of keep	11.97	
11	127 Lbs.	6 Lbs.	Less than cost of keep		1.14
12	152 Lbs.	19 Lbs.	More than cost of keep	3.61	
13	149 Lbs.	16 Lbs.	More than cost of keep	3.04	
14	183 Lbs.	50 Lbs.	More than cost of keep	9.50	
15	186 Lbs.	153 Lbs.	More than cost of keep	10.07	
16	81 Lbs.	52 Lbs.	Less than cost of keep		9.88
17	169 Lbs.	36 Lbs.	More than cost of keep	6.87	
18	185 Lbs.	52 Lbs.	More than cost of keep	9.88	
19	185 Lbs.	52 Lbs.	More than cost of keep	9.88	
20	20 Lbs.	113 Lbs.	Less than cost of keep		21.27
21	128 Lbs.	5 Lbs.	Less than cost of keep		.95
22	258 Lbs.	125 Lbs.	More than cost of keep	23.75	
23	114 Lbs.	19 Lbs.	Less than cost of keep		3.61
24	90 Lbs.	43 Lbs.	Less than cost of keep		8.17
25	179 Lbs.	46 Lbs.	More than cost of keep	8.74	
26	65 Lbs.	68 Lbs.	Less than cost of keep		12.92
27	113 Lbs.	20 Lbs.	Less than cost of keep		3.80
28	67 Lbs.	66 Lbs.	Less than cost of keep		12.54

Chart of No. 2, to accompany Dr. Porter's paper.

Average cost of keep of cow, $25. Butter, net 16½ cents. Took 150 pounds to support cow. (Sept. 15, 1888 to Sept. 15, 1889.)

No.	Made	Or		Profit	Loss.
1	315 Lbs.	165 Lbs.	More than cost of keep	27.50	
2	170 Lbs.	20 Lbs.	More than cost of keep	3.33	
3	210 Lbs.	60 Lbs.	More than cost of keep	10.00	
4	181 Lbs.	31 Lbs.	More than cost of keep	5.16	
5	100 Lbs.	50 Lbs.	Less than cost of keep		8.33
6	120 Lbs.	30 Lbs.	Less than cost of keep		5.00
7	177 Lbs.	27 Lbs	More than cost of keep	4.50	
8	182 Lbs.	32 Lbs.	More than cost of keep	5.33	
9	180 Lbs.	30 Lbs.	More than cost of keep	5.00	
10	171 Lbs.	21 Lbs.	More than cost of keep	3.50	
11	90 Lbs.	60 Lbs.	Less than cost of keep		10.00
12	161 Lbs.	11 Lbs.	More than cost of keep	1.83	
13	170 Lbs.	20 Lbs.	More than cost of keep	3.30	
14	159 Lbs.	9 Lbs.	More than cost of keep	1.50	
15	146 Lbs.	4 Lbs.	Less than cost of keep		.66
16	140 Lbs.	10 Lbs.	Less than cost of keep		1.66
17	143 Lbs.	7 Lbs.	Less than cost of keep		1.16
18	155 Lbs.	5 Lbs,	More than cost of keep	.83	
19	144 Lbs.	6 Lbs.	Less than cost of keep,		1.00
20	85 Lbs.	65 Lbs.	Less than cost of keep		12.50
21	118 Lbs.	32 Lbs.	Less than cost of keep,		5.33
22	230 Lbs.	80 Lbs.	More than cost of keep	13.33	
23	192 Lbs.	42 Lbs.	More than cost of keep	7.00	
24	120 Lbs.	30 Lbs.	Less than cost of keep		5.00
25	202 Lbs.	52 Lbs.	More than cost of keep	8.66	
26	135 Lbs.	15 Lbs.	Less than cost of keep		2.50
27	120 Lbs.	30 Lbs.	Less than cost of keep		5.00
28	90 Lbs.	60 Lbs.	Less than cost of keep		10.00
29	87 Lbs.	63 Lbs,	Less than cost of keep		10.50
30	104 Lbs.	46 Lbs.	Less than cost of keep		7.66
31	132 Lbs.	18 Lbs'	Less than cost of keep		3.00
32	151 Lbs.	1 Lbs.	More than cost of keep	.16	
33	100 Lbs.	50 Lbs.	Less than cost of keep,		8.33

(After No. 5, 217 pounds, etc., Mr. Porter said, profit 15.96): Let me say that was a grade Shorthorn heifer that gave rich milk, and the next year she made very little over 100 pounds, and was sold at once; she took on fat and didn't give give us butter to amount to anything.

16. That cow was a chronic kicker, about once a month she would land the man over the fence. I encouraged him and he used a club, and she dried up. Kept at a loss of $21.27. We didn't keep her very long. That is what you get for resorting to corporal punishment in the dairy. I paid $10 for the privilege of milking that cow a year.

22. Is an old native cow a very hard milker. I found the ends of the teats were hardened, inflamed, and I resorted to medical treatment—rubbing the ends of the teat

about a minute before commencing to milk, and rubbed that hardness away, and she milks much easier.

23, 24, 25, 26. A great part of those that gave the small quantities were grade Jersey heifers; they were very well fed. Those cows a little more than paid their cost of feed. I guess the skimmed milk paid for the bran.

You will be apt to estimate your cows too highly until you get the test; that may take the conceit out of you. I think it will out of a good many gentlemen that think they have good cows.

The Chairman—The subject is now before the convention.

A member—I would like to ask what the profit is on the first year—the total.

Mr. Porter—I cannot tell without figuring the thing up. It is a very difficult subject to handle. You will find it so when you come to test your cows. The average cow took 133 pounds of butter to support her; they made 155 pounds on the average. That is twenty-two pounds at nineteen cents a pound.

The Chairman—In the neighborhood of $4.00, in that vicinity?

Dr. Porter—Twenty cents will be $4.40.

PROFITABLE BUTTER PRODUCTION.

BY S. B. MORRISON, Ft. Atkinson.

In order that butter may be produced at a profit we will first consider the care of the cows.

They should be carefully handled, salted every day, have plenty of pure water to drink, a good warm stable and even in moderately cold winter weather should be out only long enough to drink. If at milking time the cows teats are cold, either they have been out too long or the stable is not warm enough. In the fall if the weather is cold or stormy,

let them stay in the stable. Make the cow as comfortable as possible and it will be money in the owner's pocket. These facts I have ascertained at considerable expense. At calving time they should not be so fat that a change in the weather will cause milk fever, nor yet so poor as to need assistance when they arise in the morning, but in good thrifty condition. They should be fed plenty of the cheapest feed that will produce the desired result. As much as possible of this should be raised upon the farm, that the farmer may have the profits which come both from raising and also feeding his crop. For example, corn can be raised and placed in the stack or silo at a profit, for $15 per acre, and when fed to a herd of good cows in a balanced ration it will bring the feeder $50 in butter and milk. A cow will consume during the year, 5 tons of ensilage, $5; 1 ton clover hay, $5; 1 acre pasture, $5; 1 ton bran, $15; total $30. The skimmed milk will pay for her care and her calf the interest on the investment, and if she is what she ought to be she will make 300 pounds of butter on this feed. Add to this the cost of making the butter, packages and salt and we have the cost of a pound of butter at about 13 cents. A herd of good cows fed from 10 to 12 pounds of grain per day, corn, fodder or ensilage, and good hay, should and will make a pound of butter per day to the cow if all mature cows, and if one-third of the herd are heifers, three-fourths of a pound is a good average. No matter of what breed the cows may be, they should be carefully tested, and any cow, when fed as I have indicated, that three months from time of calving will not make 1 pound of butter should be sold as soon as possible.

When oats are as cheap as last year they may be fed to the cows in the bundle with excellent results. This we did the last two years, but this year bran was bought at $13 per ton when oats brought 45 cents per bushel, 1 lb. oats paying for 2 lbs. bran. It has always been our custom to buy our winter's supply of bran in the fall when farmers are feeding their soft corn and pumpkins, and the market has reached the lowest point.

The essential points in good butter are color, flavor and

grain. The color should be pleasing to the eye of the consumer, and as it is difficult to produce a June tint in winter, enough color should be added to the cream to give such a color.

The grain and flavor depend largely upon the feed of the cow, although it is not possible to produce a highly flavored butter from cows well advanced in pregnacy. The highest flavored butter being from the fresh cows. Our best butter makers would soon lose their customers if they gave their cows only frost-bitten grass in the fall and marsh hay in the winter. It would have about as much grain and flavor as deoderized tallow. Most of the poor butter is so before the milk is drawn from the cow, caused by the insufficient quantity of nutritious food given the cow. The butter should be washed in the churn, then salted and worked until it is waxy and firm, and placed immediately in the packages ready for shipment. Butter is never again in as good condition for working as when taken from the churn. If allowed to stand and harden, when it is worked the second time it is much harder to work, and if great care is not taken its grain will be broken and it will be salvy.

Butter made from cows fed as I have indicated should bring Elgin prices, and if it does not, either the butter is lacking in some point, or the maker is a poor salesman.

In proof of the statements made in this paper, we wish to give the experience of Mr. John Flack, Elkhorn, Wis., which was brought out by an hour's cross-examination last winter at a Farmers' Institute held at that place. In 1880 his cows produced 200 lbs. butter per cow, for which he received 33 cents per pound. In 1889 they made 300 lbs. at 24 cents per pound. In '80 they were fed largely on corn meal, the stalks being left standing to waste in the field. In '89 they were fed shock corn, bound and stacked near the barn, but in '89 50 per cent. more stock was kept on the same land, and at a much less cost, as he saved the expense of husking, shelling and grinding his corn crop. In '86 he rented his farm and kept a grocery in Elkhorn, where he retailed the butter from the farm. Although he had 35

cows he was unable to supply the demand, and received for his butter 18 cents per pound when Elgin was only 16 cents, his customers being largely mechanics, day laborers and farmers who drew their milk to the cheese factory. As a consequence the poorer butter at the other stores was a drug upon the market and could not be retailed in town.

DISCUSSION.

Chairman — Gentlemen, the subject of butter making is before you.

Question — I would like to ask what the gentleman considers a good ration for a dairy cow in winter?

Mr. Morrison — About six pounds of bran, from four to six pounds of corn, a good feed of ensilage, and good hay. If I have good hay I cannot find much difference whether marsh hay, tame hay or clover hay. I was feeding nice clover hay and had some marsh hay on hand I must feed out, and I fed marsh hay instead of clover, and the cows gained instead of lost. I could not account for it.

Mr. Emerton — Were you feeding ensilage at the same time twice a day?

Mr. Morrison — Yes, sir.

Chairman — Did they eat it?

Mr. Morrison — First rate. I fed bran the first thing in the morning, and then ensilage.

Mr. Bender — Why not put the ensilage in the manger and put your bran on top of it?

Mr. Morrison — That is all right.

Mr. Emerton — I think the cows would like it better, to mix the bran and ensilage. I turn my cows out immediately after breakfast, and while they are at the water trough I put the ensilage into the mangers and put their ration of bran on top. By the time they get through drinking the water they are back to the door crazy to get in. They eat their ensilage and bran and corn meal, and are satisfied.

The Chairman — What time of day is that?

Mr. Emerton — The first thing in the morning they get

a light feed of clover hay, just before breakfast, and we breakfast about half-past seven. As soon as we get through breakfast they are turned out and then have their ensilage and that answers them until noon; then they get their corn stalks. A dairyman in this state said he did not feed but twice a day of anything, and he had better success in that way. I feed three or four times, but regularly.

The Chairman — I would like to ask Mr. Morrison how many times a day he feeds.

Mr. Morrison — What you might call twice a day coarse feed.

The Chairman — How many times a day do you feed, Mr. Bender — coarse feed?

Mr. Bender — We start in the morning, and feed our cows ensilage, bran and meal the first thing while we do the milking; then we eat breakfast. After breakfast I give my cows a light ration of clover. They remain in the barn until noon. At noon they are fed a ration of clover hay out in the yard, if pleasant. At night they get ensilage and bran.

The Chairman — How many cows do you milk?

Mr. Bender — Eighteen cows; usually three of us do the milking.

Mr. Morrison — If I fed my cows before breakfast we would not have breakfast until half-past ten.

Mr. Bender — That depends upon the time you get up in the morning.

A member — I think cows will do as well fed twice a day and have what they want to eat, and give them time to chew their cuds and digest their food. The cow seems satisfied to get feed only twice.

Mr. Bender — It is a good deal with cattle as it is with a man. A man wants three square meals, and it makes him fat and good natured.

The Chairman — I have tried it, and I haven't got very fat yet. This is an important point, and I am glad it ha been brought out. I am not satisfied whether it is better to feed a cow two or three times a day. In the results that

have been compared there has been no advantage found in feeding three times a day. I have tried both methods, and I have found just as good results in feeding them twice a day coarse feed, and having them eat it up, and not have the food constantly before them.

Mr. Emerton — I feed a bushel and a half basket of ensilage, divided between two cows, twice a day; ensilage made of corn, that would yield 20 baskets of corn to the acre.

A member — How do you get your cows to eat it up clean without waste? In feeding hogs, cows and horses, whatever you give them for a meal, you want them to eat clean. If you give them ensilage only once, they won't eat enough of it.

The Chairman — Give them one feed of hay.

Mr. Faville — I have been at this business from boyhood up, and am satisfied that twice feeding, giving them enough, what they will eat up clean and not any more, don't let them waste, is better than bothering them with food oftener, and it gives them time to chew the cud, and let them lie down and be quiet, and digest the food. You can force too much into the stomach. I used to think a hog could not be fed too often, but I have had better luck feeding twice a day. A hog will force more into his stomach than he can digest properly. Give cows what they will eat up clean, twice, and you will find it more advantageous, I think.

Mr. Emerton — Do you feed ensilage?

Mr. Faville — Yes, once a day, and then corn. My coarse fodder is fed in the evening. I would let my cows out such a day as this. If the day is cold I would put the cows back in the stable as soon as the stable was cleaned.

Mr. Bender — If we farmers can dispense with feeding once a day, it is quite an ideu; but I should have to keep out of my stable from morning to night. If I should go into the stable after having had a good dinner myself, and should see those cows looking at me pleadingly, they would seem to say, "Bender, you have had three meals to-day and we have had but two."

Mr. Faville — They are creatures of habit same as you;

if you should eat only twice a day you would feel just as well.

Mr. Bender — If my wife should insist upon that, I would get a divorce.

Mr. Faville — The cow takes more into her stomach than you do, she doesn't have to stop to chew her food. The cow crowds her stomach full of coarse food, and it is chewed over, and she has to do that, it is part of her business. You have time to have the stomach rest. If you want to feed three times a day, do it.

Mr. Fleming — What has been your observation when your animals are unrestricted, and out in the pasture? Do they go out and eat for an hour or two and then lie down a while, and then get up and begin again? I think you will find they continue right along.

Mr. Faville — It is just a matter of habit, the food is before them. They can't eat enough grass to last them from morning until night; it is not solid like the dry foods they are taking in.

Mr. Fleming — When you churn, how much butter are you making from your cows?

Mr. Faville — That depends upon how good the cows are, and how many I keep. I never kept cows for the fun of it, but for what I could get out of it. I am satisfied that it is better, or certainly just as well, to feed twice a day and let them have enough.

Mr. Emerton — I would like to know if any one has ever fed ensilage and had any complaint made of the odor in the butter?

(No response.)

The Chairman — How much ensilage do you feed a day?

Mr. Morrison — About a bushel, about 30 pounds I think it weighs.

The Chairman — How much hay do you feed?

Mr. Morrison — One ration, and one of shock corn, one of bran and one of ensilage. I feed bran and ensilage in the morning and shock corn and hay at night.

Mr. Emerton — Feed them at the same time?

Mr. Morrison — I give corn first and then immediately put the hay on.

Mr. Porter — Would it not be better when bran is worth about $18 per ton, delivered at our place, and oil meal worth about $21.50 per ton, to feed oil meal than bran to cows — would not it be cheaper feed?

Mr. Morrison — I never had any experience. I should think it would.

Mr. Fleming supplemented his paper by the following remarks:

Fellow Cheese Makers — This brings us to the most important part, connected with successful cheese making in the state of Wisconsin. The milk having been produced, the question now arises, how shall we treat it that from it we may make the most and best cheese? I am satisfied that the milk from cows, as we get it, is not in a condition to produce perfect cheese. Why? It has in it what we commonly term animal odor. This can be detected by the sense of taste immediately after the milk is taken from the cow. If this odor be permitted to remain in the milk, it goes into the vat, and thence into the cheese, and is decidedly detrimental.

For an object lesson, go to any separator in use in the state of Wisconsin, where milk is creamed on the centrifugal plan. While it is being creamed go to the exhaust pipe of that separator and see if you do not detect odors which you never supposed existed in milk. In this way, or by inhaling odors immediately after the milk is drawn from the cow, we are enabled to detect those impurities. This animal odor can be driven out of the milk by artificial means only when at this point; it is only then that the pores of the milk are open and free to give off those impurities. I earnestly recommend, as I see young men here, who, during the coming season will have charge of many of the factories of the state, that you adopt a system of perfect cleanliness in your own department; that you not only advise, but insist, that the patrons of your factories shall

aerate their milk as quickly as possible after it comes from the cow. Let them purchase a dipper for this purpose, nothing that has not a capacity of one gallon; emphasize these instructions to your patrons, that as quickly as the cows have been milked, that the milk be strained for the purpose of separating from the milk some of the foreign substances which have gotten in, and to facilitate aeration, I recommend strongly that nothing but a tin strainer be used; instruct them to go into the bottom of the can with the dipper, pour and repour the milk, thereby causing it all to contact with the air — the best known purifier. But impress upon them that it is necessary to do this while the milk is at its normal temperature of 98 or 100 degrees. If they have been in the habit of putting the milk into cold water, insist upon their abandoning that habit.

The cooling of milk is decidedly objectionable in cheese making. Cooling is simply a condensing of it, closing up of its pores, and by so doing incorporating into its meshes or pores, these odors we are desirous of driving from it. Therefore we should stir to keep the surface broken, to drive out those gases, and prevent the milk from creaming. Here is a truth that I wish to be spread through the country — and it is to offset many of the arguments advanced by the patrons of factories who will come to you and say they send pure milk to the factory, and after it is received there the cheese-maker is responsible for it. At first sight, gentlemen, that would seem true, but it is practically fallacious. If you cool your milk down to a temperature of 65 degrees, you have baffled the keenest perception of any cheese-maker in the state of Wisconsin, so far as detecting the objecitonable elements in that milk. Why? Because you have produced such a thorough condensation of that milk, and closing up of its pores, that when you attempt to smell it there are no odors to pass off. It is for this reason that many a good cheesemaker, who understands his business well, has failed to make good cheese — because the milk has been sent to the factory in such a condition he could not detect its impurities. I would say to you that if there are any means by which you can hold your patrons